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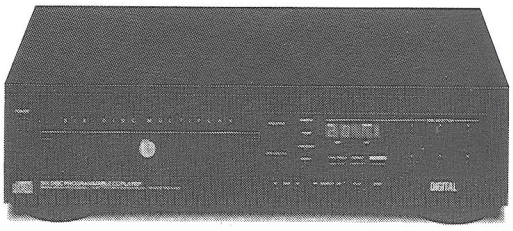
AK796/17

Service
Service
Service



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Service Manual

COMPACT disc DIGITAL AUDIO

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CLASS 1
LASER PRODUCT
3122 110 03420

Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Serviço

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Published by
Service Consumer Electronics

(GB) Specifications

Mains voltages	: 220 V service solution for 110 V – 240 V
Mains frequencies	: 50-60 Hz
Power consumption	: 15 W
Dimension (W×H×D)	: 360×90×340 mm 420×90×340 mm
Frequency range	: 20-16000 Hz ±1,5 dB
Output resistance	: 1 kΩ
Nominal load impedance	: 100 kΩ//100 pF
Amplitude linearity	: ± 1,5 dB (20-16000 Hz)
Signal to noise ratio	: ≥ 75 dB
Channel separation	: ≥ 60 dB
Total harmonic distortion	: 0,005%
Audio output level	: 1,5 V_{RMS}

(D) Spezifikation

Netzspannung	: 220 V service Lösung für 110 V – 240 V
Netzfrequenz	: 50-60 Hz
Leistungsaufnahme	: 15 W
Abmessungen (B×H×T)	: 360×90×340 mm 420×90×340 mm
Frequenzgang	: 20-16000 Hz ±1,5 dB
Ausgangswiderstand	: 1 kΩ
Nennbelastungsimpedanz	: 100 kΩ//100 pF
Amplitudeulinearität	: ± 1,5 dB (20-16000 Hz)
Signal/Rausch Verhältnis	: ≥ 75 dB
Kanaltrennung	: ≥ 60 dB
Gesamt-Klirrfaktor	: 0,005%
Audio-ausgangspegel	: 1,5 V_{RMS}

(NL) Specifikaties

Netspanning	: 220 V service oplossing voor 110 V – 240 V
Netfrequentie	: 50-60 Hz
Opgenomen vermogen	: 15 W
Afmetingen (Br×H×D)	: 360×90×340 mm 420×90×340 mm
Frequentie bereik	: 20-16000 Hz ±1,5 dB
Uitgangsweerstand	: 1 kΩ
Nominale belastings impedantie	: 100 kΩ//100 pF
Amplitude lineariteit	: ± 1,5 dB (20-16000 Hz)
Signaal/ruis afstand	: ≥ 75 dB
Kanaalscheiding	: ≥ 60 dB
Vervorming T.H.D.	: 0,005%
Audio uitgangsniveau	: 1,5 V_{RMS}

(F) Caractéristiques techniques

Tension secteur	: 220 V solution service pour 110 V – 240 V
Fréquences secteur	: 50-60 Hz
Consommation	: 15 W
Dimensions (L×H×P)	: 360×90×340 mm 420×90×340 mm
Gamme de fréquence	: 20-16000 Hz ±1,5 dB
Résistance de sortie	: 1 kΩ
Impédance de charge	: 100 kΩ//100 pF
Linéarité de l'amplitude nominale	: ± 1,5 dB (20-16000 Hz)
Rapport sign./bruit	: ≥ 75 dB
Séparation des voies	: ≥ 60 dB
Distortion (THD)	: 0,005%
Niveau sortie audio	: 1,5 V_{RMS}

(I) Caratteristiche tecniche

Tensione rete	: 220 V soluzione servizio per 110 V – 240 V
Frequenza rete	: 50-60 Hz
Potenza assorbita	: 15 W
Dimenzioni (L×A×PR)	: 360×90×340 mm 420×90×340 mm
Risposta in Frequenza	: 20-16000 Hz ±1,5 dB
Resitenza di uscita	: 1 kΩ
Impedenza di carica	: 100 kΩ//100 pF
Linearità d'ampiezza	: ± 1,5 dB (20-16000 Hz)
Rapporto segn./ronz.	: ≥ 75 dB
Separazione dei can.	: ≥ 60 dB
Distorzione T.H.D.	: 0,005%
Livello uscita audio	: 1,5 V_{RMS}

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

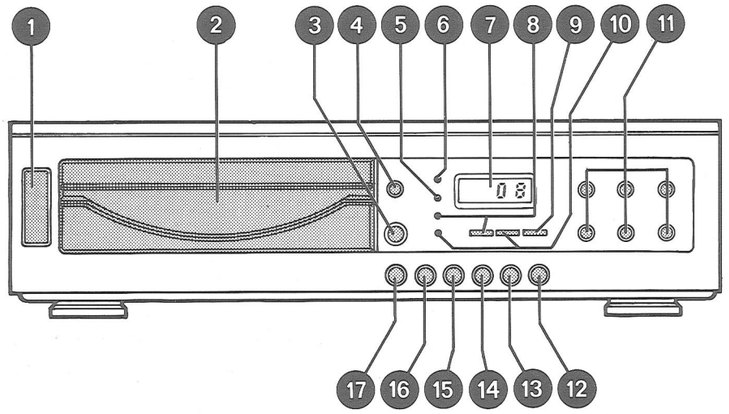
(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

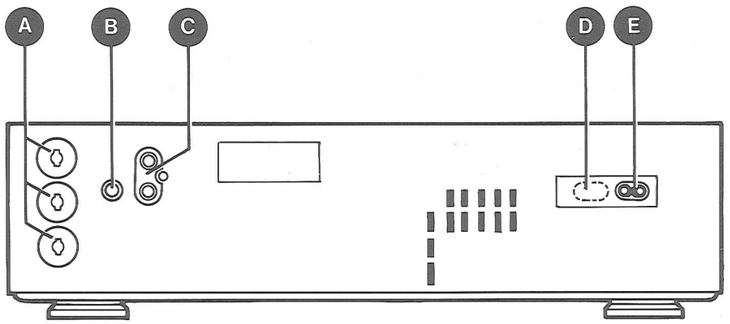
(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago identici a quelli specificati.

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

CONTROLS AND CONNECTIONS



1 On/Off button
2 C.D. door
3 Open/Close button O/C
4 Program button PROG
For stroring track and disc numbers in a program
For checking the program during play (review)
5 Pause indication 6980
6 Shuffle indication 6981
7 Display 6984
8 Time/Track indication 6983
Time/Track button T/T
For selecting between disc/track number and playing time indication.
9 Shuffle button SHUF
For playing all tracks on a disc in random order
10 Repeat indication 6982
Repeat button REP
For repeating a complete cassette or programme
11 Disc selection buttons 1÷6
12 Stop/CM button STOP
For stopping play and for erasing a programme (press twice)
13 Play/Pause button Play
For starting/interrupting play
14 Search up button ≫
15 Search down button ≪
16 Skip forward button NEXT
For selecting next track
17 Skip back/Replay button PREV
For selecting previous track



B Remote Control input
C L/R channel output
D Voltage selector (only /01/21)
E Mains input

BEDIENINGSORGANEN EN AANSLUITINGEN

1 Aan/uit knop
2 C.D. door
3 Open/dicht knop O/C
4 Programma knop PROG
Voor het vastleggen van liednr. en discnr in het geheugen
Voor controle van het geheugen
5 Pause indicatie 6980
6 Shuffle indicatie 6981
7 Display 6984
8 Tijd/spoor indicatie 6983
Tijd/spoor keuzeknop T/T
Kiest tussen plaat/spoornr en speeltijd
9 Shuffle knop SHUF
Om alle liedjes van een plaat in willekeurige volgorde te spelen
10 Herhaal indikatie 6982
Herhaal knop REP
Om een complete cassette of Programma te herhalen
11 Disc selectie knop 1÷6
12 Stop/CM knop STOP
Om weergeven te stoppen en het programma te wissen (2× drukken)
13 Weergeef/Pauze knop PLAY
Voor weergeven en tijdelijk stoppen van de weergave.
14 Zoekknop op ≫
15 Zoekknop neer ≪
16 "Skip forward" knop NEXT
Voor weergeven volgend liedje
17 "Skip back/replay" knop PREV
Voor weergeven vorig liedje en herhalen van het spelend nummer

B Ingang afstand bediening
C Uitgang L/R kanaal
D Spannings selectie (alleen /01/21)
E Netspannings ingang

BEDIENUNGSORGANE UND ANSCHLÜSSE

1 Ein/Aus Taste
2 C.. Fach
3 "Open/Close" Taste O/C
4 "Program" Taste PROG
Zum Festlegen (oder Löschen) der Stücknummern eines Programms.
5 Pause-Anzeige 6980
6 "Shuffle"-Anzeige 6981
7 Anzeigefeld 6984
8 Stucknummer/index Anzeige 6983
"Time/Track" Wahl Taste T/T
Zur Wahl der Stuck/Indexnummer oder die gesamtspieldauer
9 "Shuffle" Taste SHUF
Zum Abspielen in beliebiger Reihenfolge
10 Wiederholungsanzeige 6982
Wiederholungstaste REP
Zum Wiederholen von CD-Platten oder des Programms
11 Plattennummer Taste 1÷6
12 "Stop/CM" Taste STOP
Zum Stoppen des Abspielens
Zum Löschen des Programms (2× drücken)
13 "Play/Pause" Taste PLAY
Zum Starten des Abspielens oder Unterbrechen des Abspielens
14 "Search" Taste (Vor) ≫
15 "Search" Taste (Zurück) ≪
16 "Skip forward" Taste NEXT
Zum folgenden Stücknummer
17 "Skip back" Taste PREV
Zum vorigen Stücknummer

B Anschlussbuchse für Fernbedienung
C Ausgangsbuchse L/R Signal
D Umschalter Netzspannung (nur /01/21)
E Anschlussbuchse für Netzkabel

COMMANDES ET CONNEXIONS

1 Commutateur marche/arrêt
2 Couvercle du porte-disque
3 Touche "Open/Close" O/C
4 Touche "Program" PROG
Pour la Programmation (ou l'effacement) des titres d'un programme
5 Indication d'arrêt momentané 6980
6 Indication "shuffle" 8981
7 Affichage 6984
8 Indication du titre/de l'index 6983
Touche "Time/Track" T/T
Pour faire apparaître l'indication de la plage/de l'index ou l'indication de durée
9 Touche "Shuffle" SHUF
Pour la lecture des différents titres dans un ordre quelconque
10 L'indication de répétition 6982
Touche "Repeat" REP
Pour la répétition des disques ou du programme
11 Touche le numero du disques 1÷6
12 Touche "stop/CM" STOP
Pour l'arrêt de la lecture En position d'arrêt pour l'effacement du programme (pressez 2×)
13 Touche "Play/Pause" PLAY
Pour commencer la lecture d'un titre ou d'un passage, ou pour interrompre la lecture
14 Touche "search" (en sens arrière) ≫
15 Touche "search" (en sens avant) ≪
16 Touche "skip forward" NEXT
Pour le chox dans l'ordre croissant
17 Touche "skip back" PREV
Pour le chox dans l'ordre decroissant

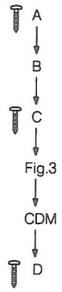
B Prise RC-5
C Price G/D signal
D Commutateur tension secteur (seul /01/21)
E Prise cordon secteur

ORGANI DI COMANDO E PRESE

1 Interruttore acceso/spento
2 Sportellino del vano portadischi
3 Tasto "Open/Close" O/C
4 Tasto "Program" PROG
per la memorizzazione (o cancellazione) dei brani di un programma
5 Indicazione di Pauza 6980
6 Indicatore "Shuffle" 6981
7 Display 6984
8 Indicazione "Time/Track" T/T
Per la visualizzazione del numero del brano o della parte codificata de brano o della durata di ascolto troscorsa
9 Tasto "Shuffle" SHUF
Per la riproduzione in una sequenza qualsiasi dei brani sul disco
10 Indicazione di Ripetizione 6982
Tasto ripetizione REP
Per la ripetizione di un disco o programma composto
11 Tasto numero di dischi 1÷6
12 Tasto Stop/CM STOP
Per arrestare la riproduzione e per cancellare un programma a disco fermo (premere 2x)
13 Tasto "Play/Pause" PLAY
Per dar inizio alla riproduzione di un brano o passagio o per interrompere la riproduzione
14 Tasto "search" (più avanti) ≫
15 Tasto "search" (più all'indietro) ≪
16 Tasto "Skip forward" NEXT
selezione progressiva
17 Tasto "Skip back" PREV
Selezione regressiva

B Presa per RC-5
C Presa per S/D canale
D Interruttore tensione rete (solo 01/21)
E Presa per cordone rete

DEMOUNTING HINTS



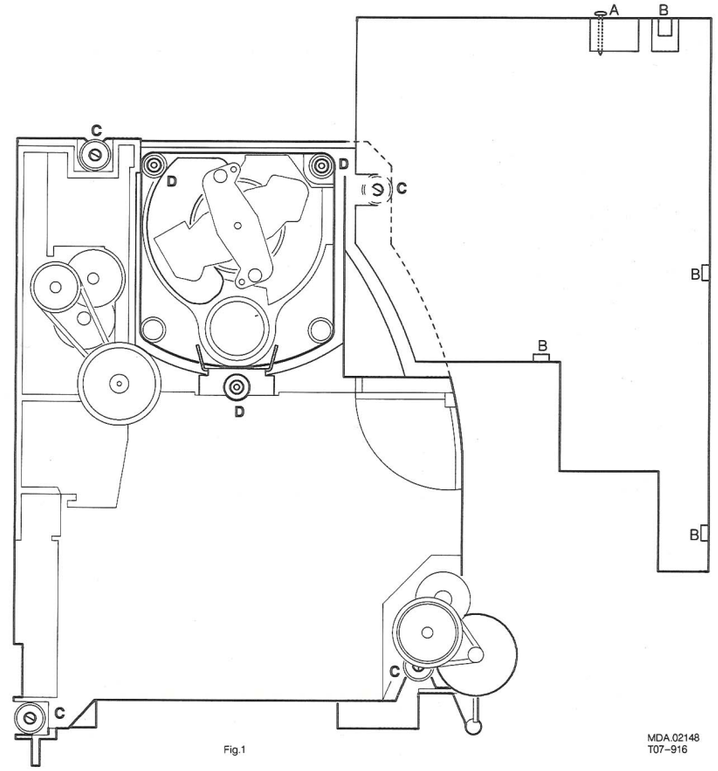


Fig.1

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T07–916

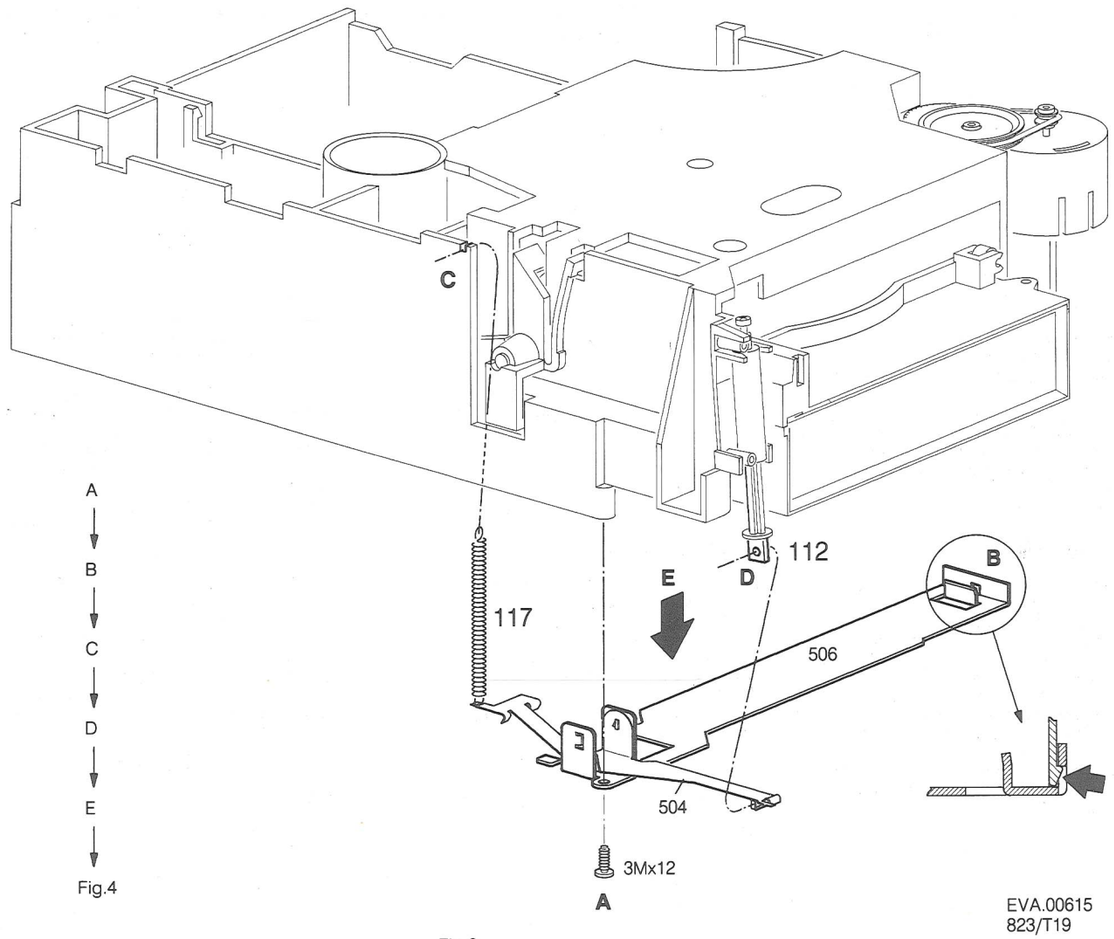
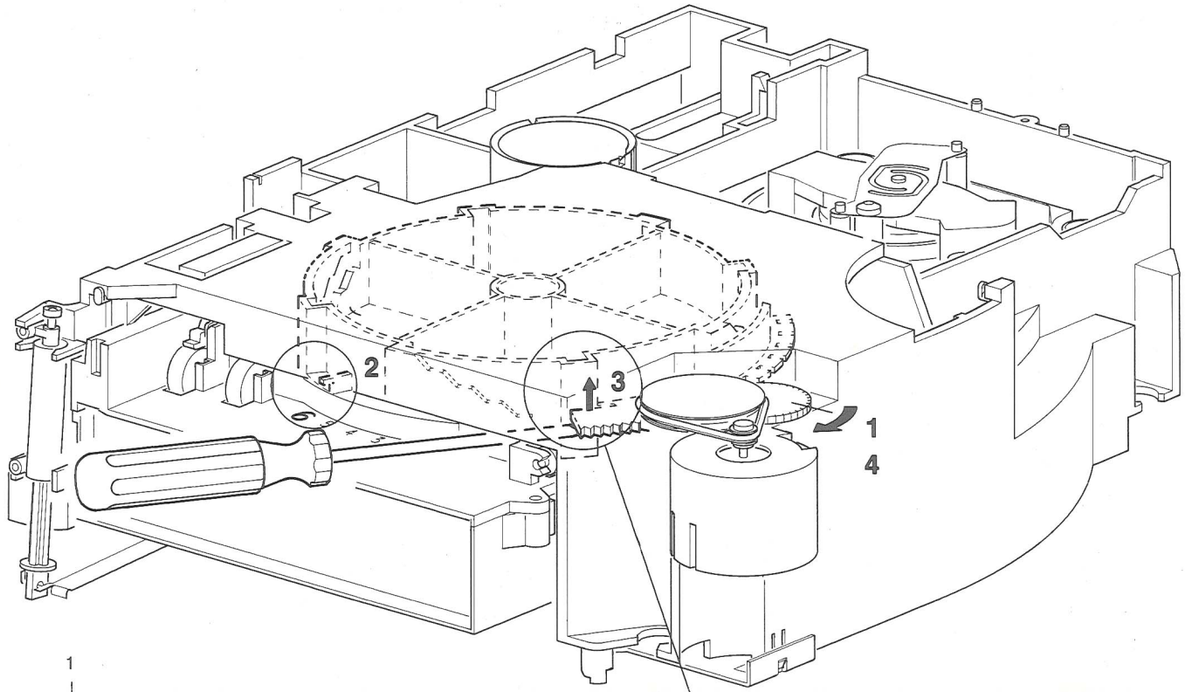


Fig.3

EVA.00615
823/T19



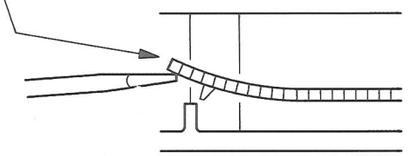
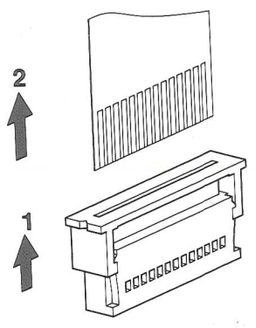


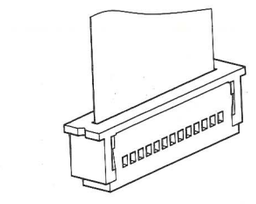
Fig.5

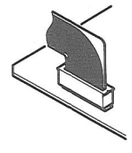
Fig.4

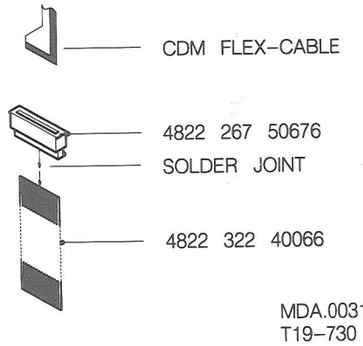
EVA.00614
822/T19



MDA.01408
T28/822







MDA.00311
T19–730

Service tools

Audio test disc (3)	4822 397 30085
Disc withhout errors (5) and disc with DO errors black spots and fingerprints (5A)	4822 397 30096
Disc 65 min. 1 kHz without pause	4822 397 30015
13th order filter	4822 395 30204
Service cable (5P)	4822 321 21273
Service cable (14P)	4822 321 21598
Service flatfoil (14P)	4822 322 40066
Service connector (14P)	4822 267 50676
Glass disc	4822 395 90204
Torx screwdrivers	4822 395 50145

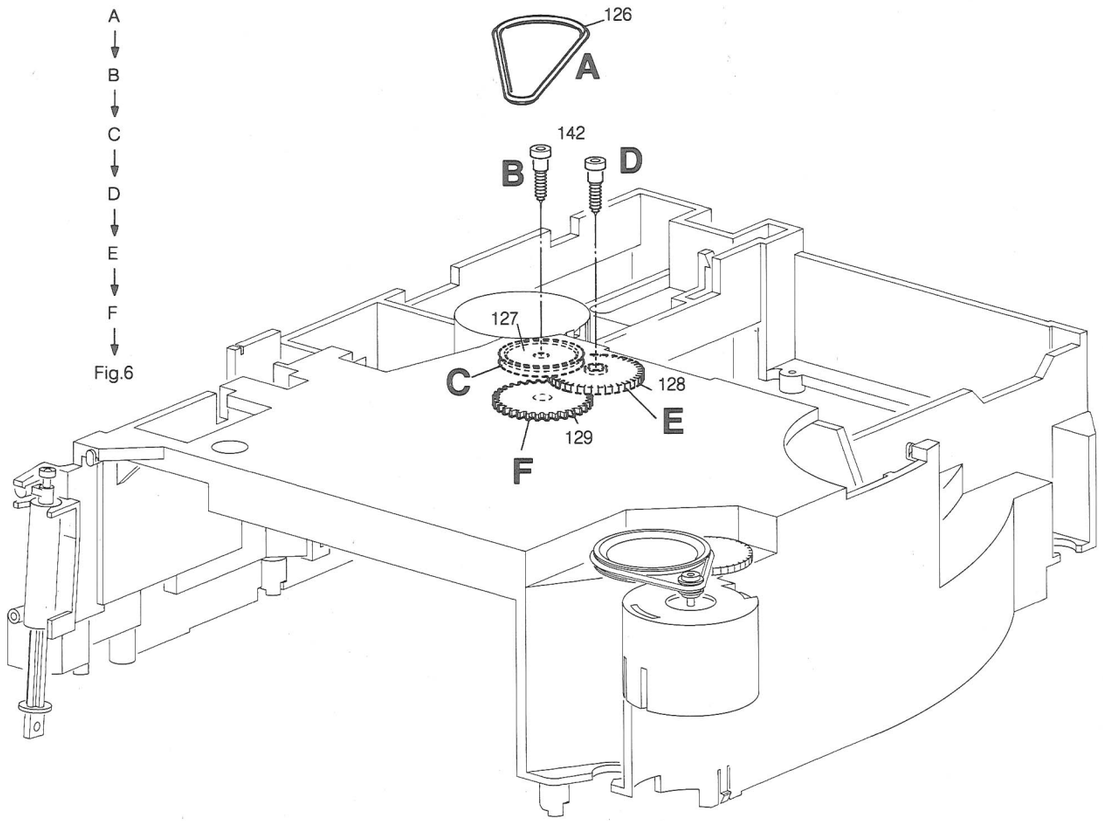


Fig.6

Fig.5

EVA.00617
823/T19

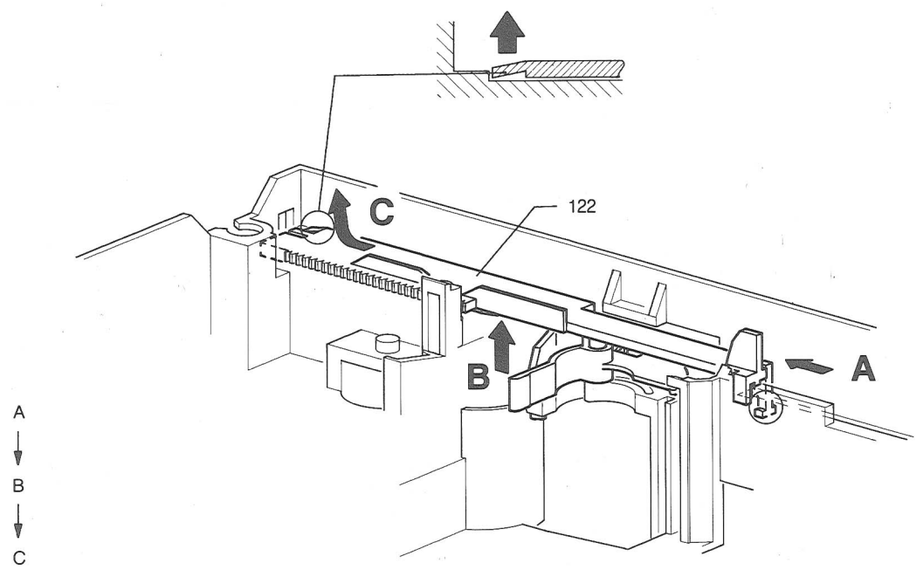
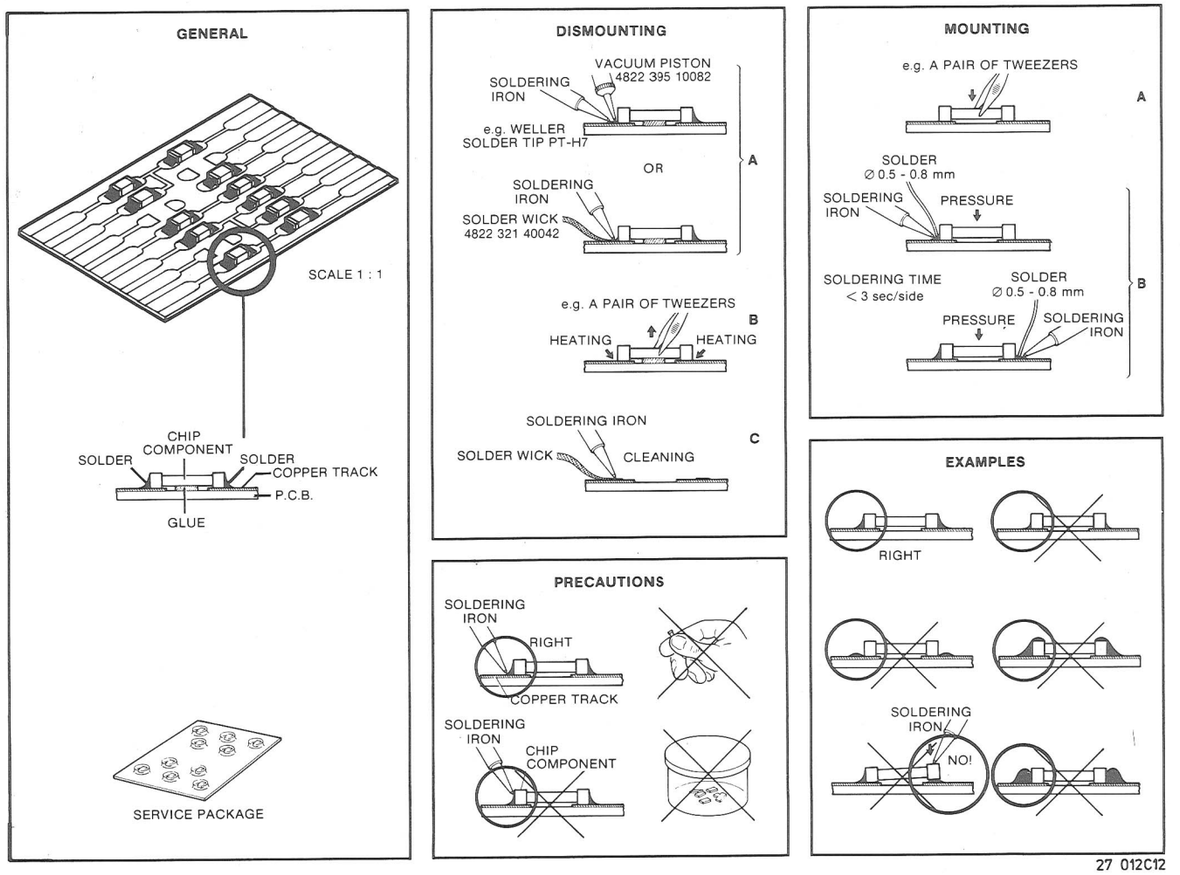


Fig.6

EVA.00618
823/T19



27 012C12

GB **WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

F **ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

ESD

D **WARNUNG**

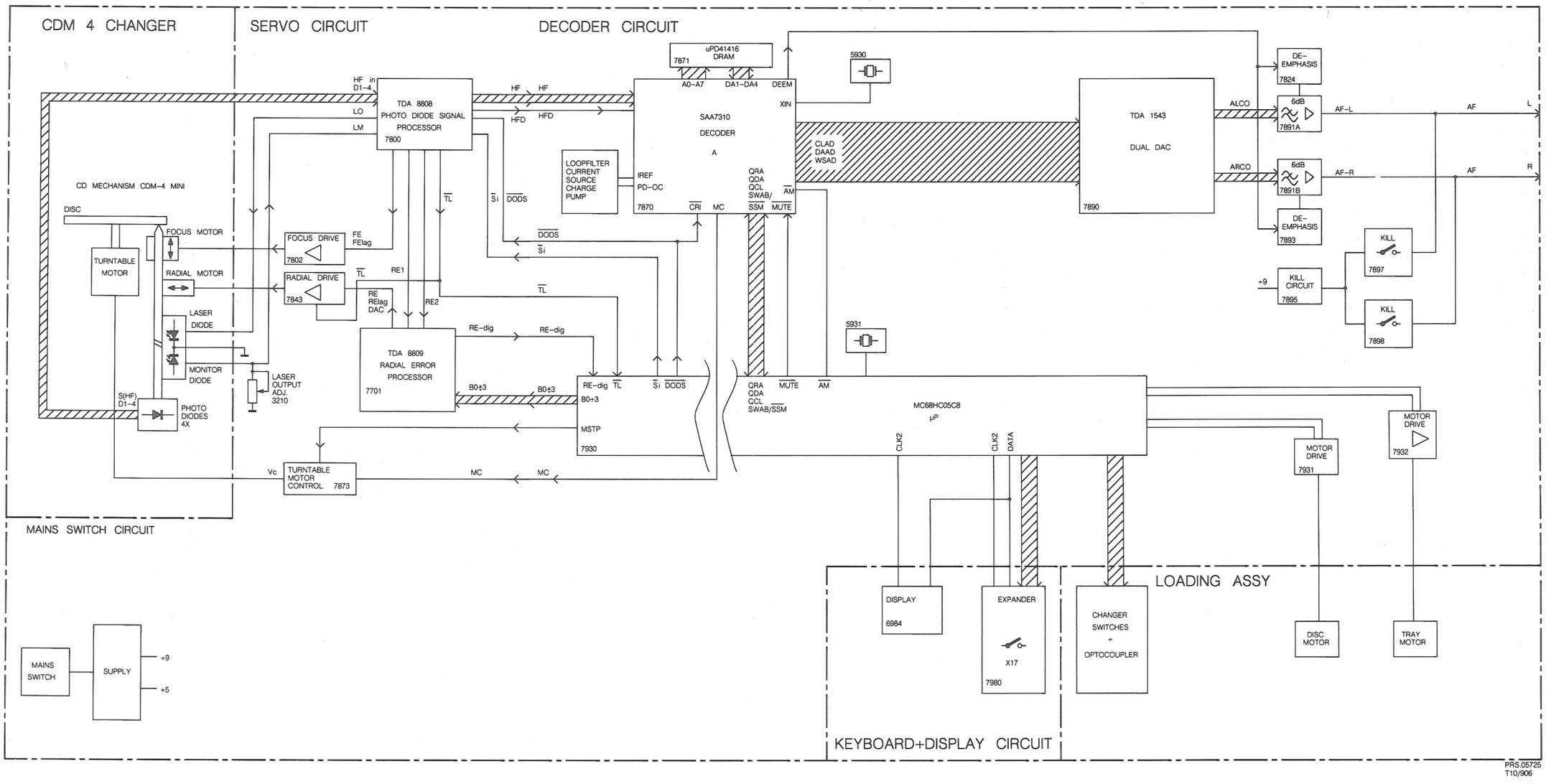
Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

NL **WAARSCHUWING**

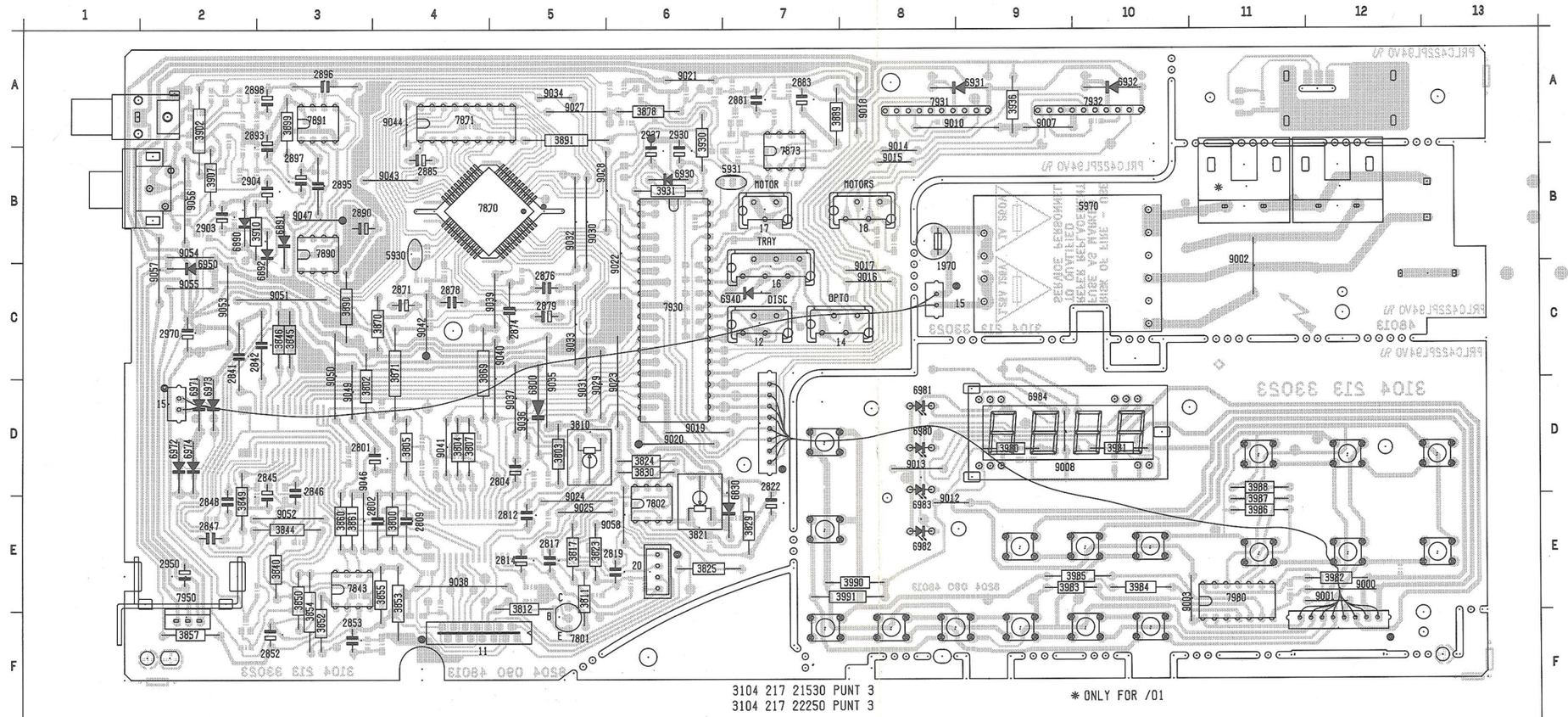
Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

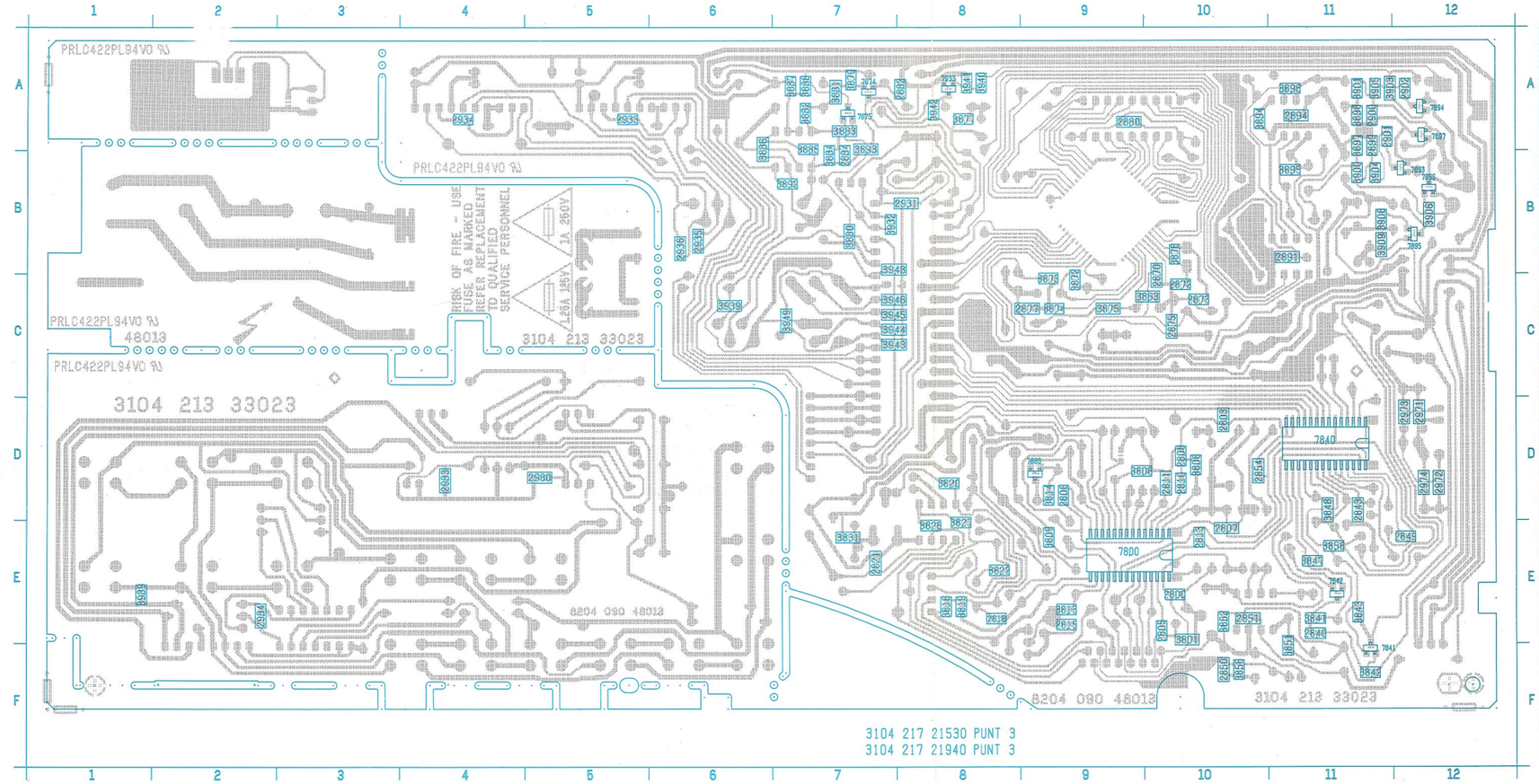
I **AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

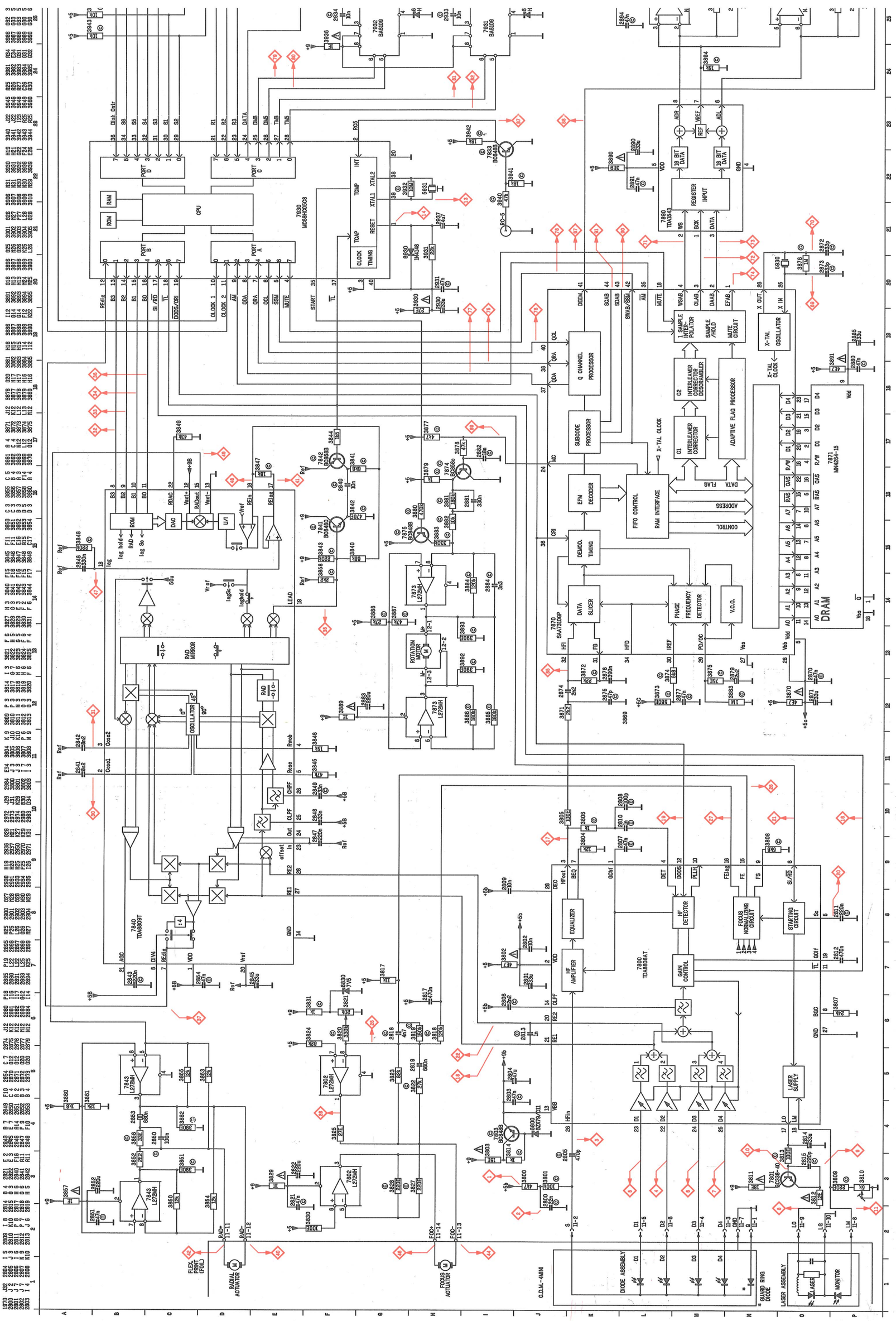


B0-B3	– Control bits for radial circuit	RE2	– Radial error signal 2 (summation of amplified currents D_1 and D_2	CLAD	– Clock signal Decoder-A to DAC	QCL	– Q-channel Clock signal
DAC	– Current output for track jumping (Digital to Analogue Converted)	RE dig	– Radial error digital	CRI	– Counter Reset Inhibit	QDA	– Q-channel Data signal
$\overline{\text{DODS}}$	– Drop out detector supression	RE lag	– Radial error signal for LAG network	DAAD	– Data signal Decoder-A to DAC	QRA	– Q-channel Request Acknowledge
D1÷4	– Photodiode currents	Si	– On/off control for laser supply and focus circuit	DEEM	– Deemphasis	SWAB/SSM	– Subcode Word/Start-stop motor signal
FE	– Focus error signal	TL	– Track loss signal	IREF	– Reference Current	WSAD	– Word Select Decoder-A to DAC
FE-lag	– Focus error signal for LAG network	Vc	– Control voltage for turntable motor	MSTP	– Motor start-stop signal	XIN	– Oscillator signal in Decoder-A
HFD	– HF detector output for DEMOD			MUTE	– Mute signal		
HF-in	– HF current input			PD/0C	– Phase detector - oscillator control		
LM	– Laser monitor diode input			AM	– Additional mute		
LO	– Laser amplifier current output						
MC	– Motor control signal						
RE	– Radial error signal (amplified RE_2-RE_1 currents)						
RE1	– Radial error signal 1 (summation of amplified currents D_3 and D_4						


PRLC422PL94V0 9J
3104 213 33023
8204 090 48013
HIGH OF FIRE - USE ONLY FUSE MARKED AS REPLACEMENT
REFER REPLACEMENT TO QUALIFIED SERVICE PERSONNEL
4A 250V
4A 125V
MOTOR
MOTORS
TRAY
DISC
OPTO
3104 217 21530 PUNT 3
3104 217 22250 PUNT 3
* ONLY FOR /01


PRLC422PL94V0 9J
3104 213 33023
8204 090 48013
3104 217 21530 PUNT 3
3104 217 21940 PUNT 3

CS 22 562


CPU
ROM
RAM
PORT A
PORT B
PORT C
PORT D
7690 M0804R0008
TOAP
TOMP
XTAL1
XTAL2
RESET
CLOCK
TIMING
INT
ROS
7840 TDA8809T
7890 TDA1543
REGISTER INPUT
18 BIT DATA
REF
ADR
ADL
VDD
GND
WS
BCK
DATA
X-TAL OSCILLATOR
X-TAL CLOCK
1. SAMPLE INTER-POLATOR
SAMPLE /HOLD
MUTE CIRCUIT
Q CHANNEL PROCESSOR
SUBCODE PROCESSOR
EFM DECODER
DEMOD. TIMING
FIFO CONTROL
RAM INTERFACE
INTERLEAVER CORRECTOR
DESCRAMBLER
ADAPTIVE FLAG PROCESSOR
DATA
ADDRESS
CONTROL
7870 SAA7310DP
DATA SLICER
PHASE FREQUENCY DETECTOR
V.C.O.
DRAM
7871 MN4864-15
7840 TDA8809T
ROM
DAC
RAD MIRROR
OSCILLATOR
ROTATION MOTOR
7873 L272M
7802 L272M1
7843 L272M1
7842 BC858B
7841 BC848C
7675 BC848B
7676 BC858B
7677 BC858B
7678 BC858B
7679 BC858B
7680 BZV79/C11
7681 BC848B
7682 BC848B
7833 BC848B
7832 BA6109
7831 BA6109
7930 1N4148
7931 BC848B
7932 BC858B
7933 BC848B
7934 BC858B
7935 BC858B
7936 BC858B
7937 BC858B
7938 BC858B
7939 BC858B
7940 BC858B
7941 BC858B
7942 BC858B
7943 BC858B
7944 BC858B
7945 BC858B
7946 BC858B
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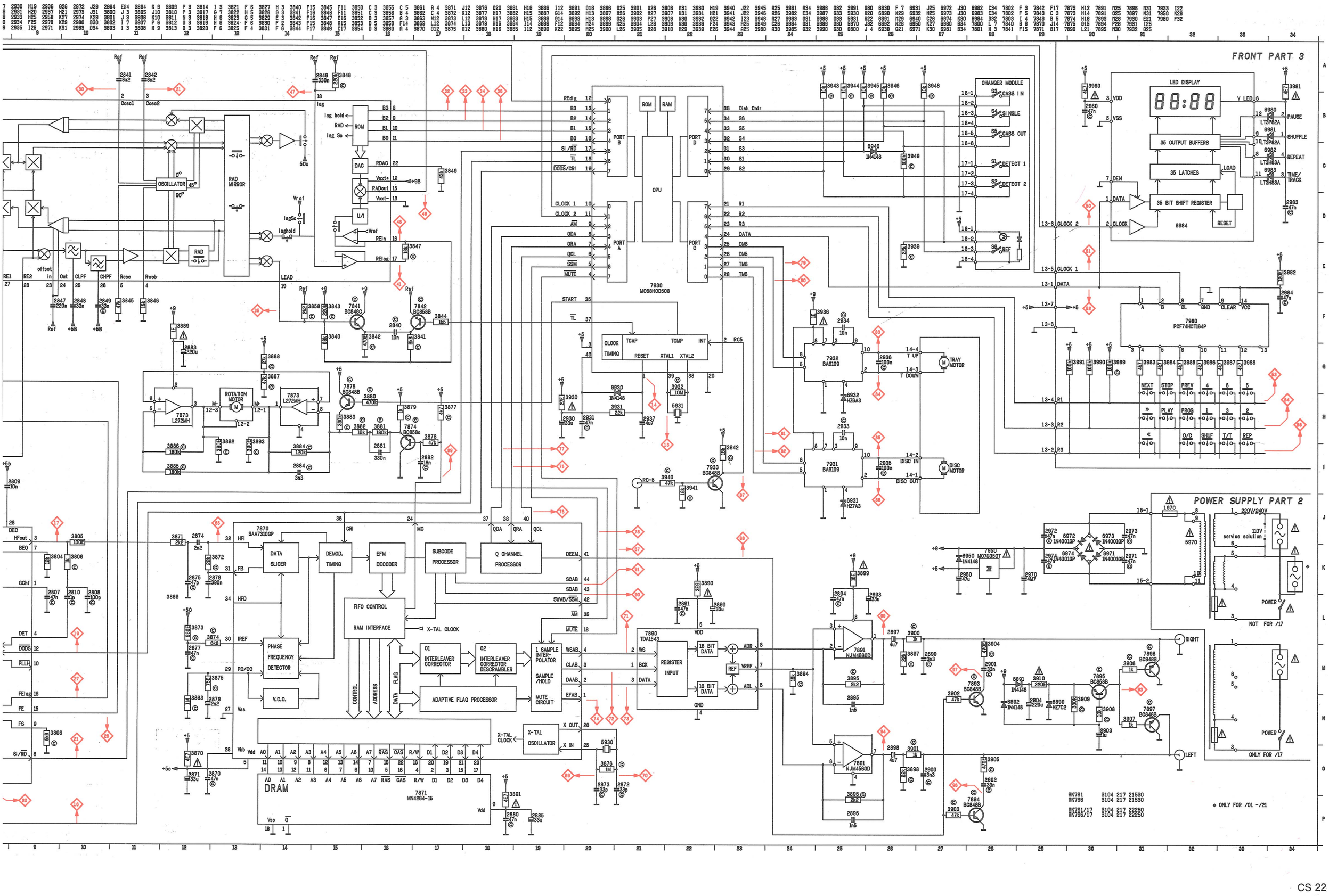
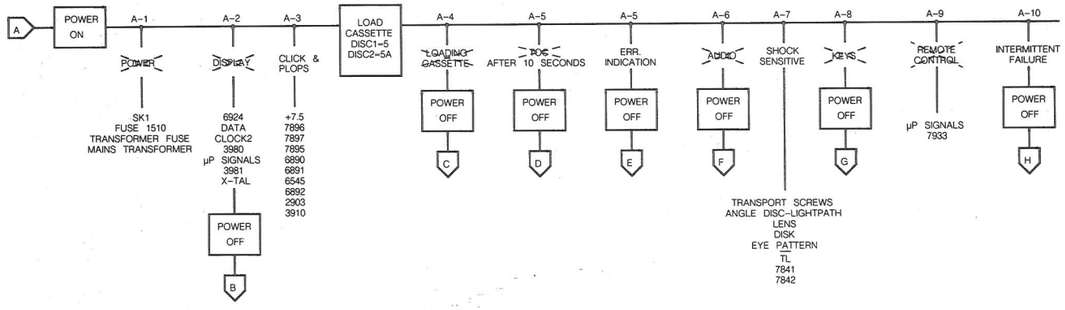
7951 BC858B
7952 BC858B
7953 BC858B

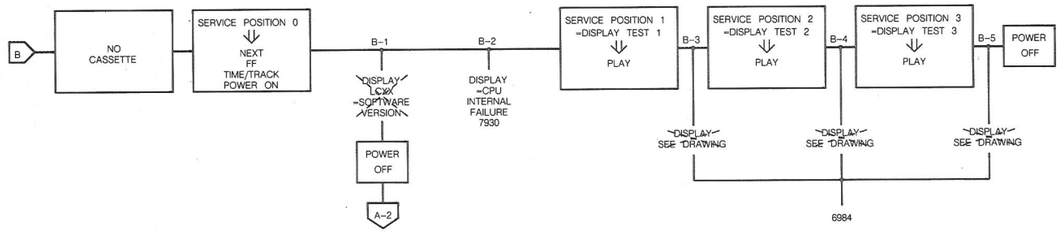
FRONT PART 3

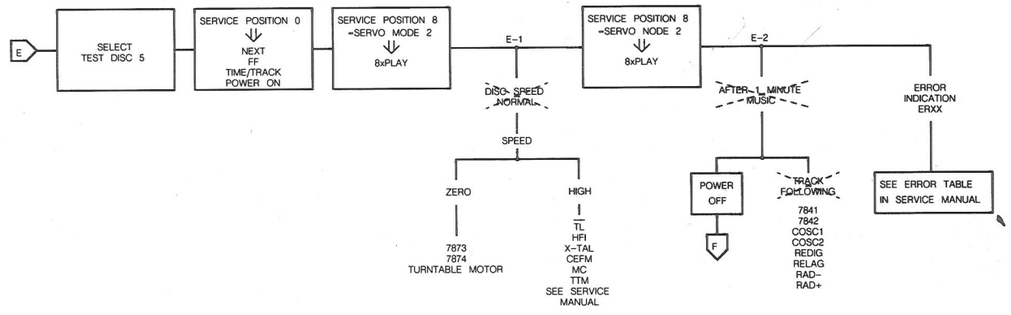


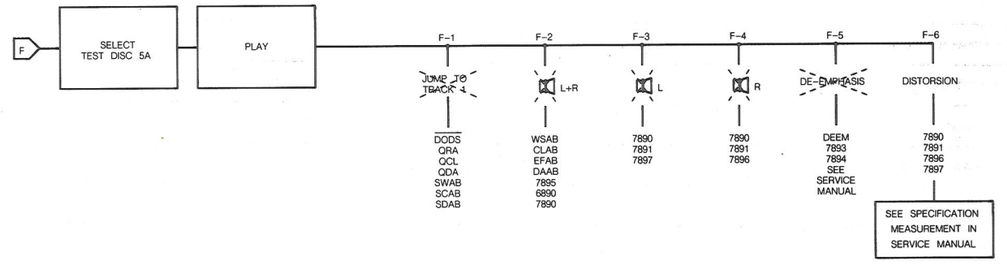
CS 22 563

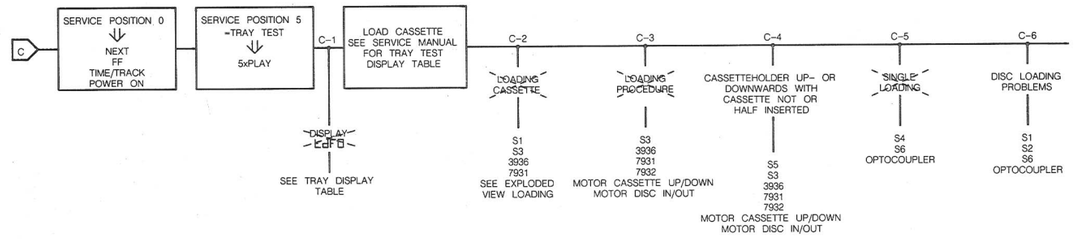
MEASUREMENTS AND ADJUSTMENTS

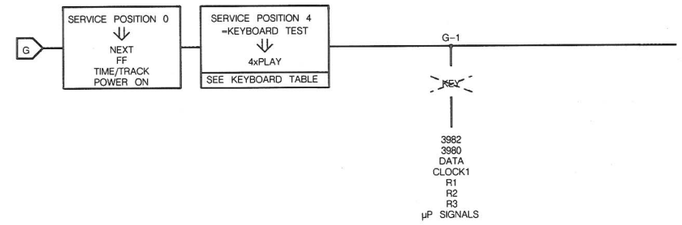


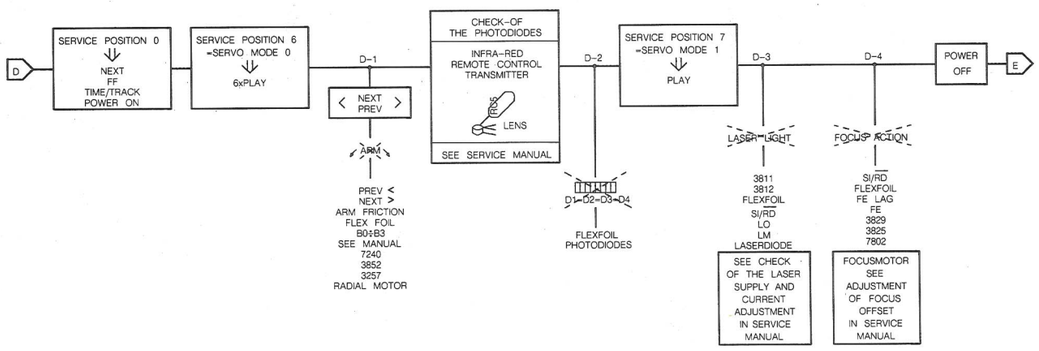




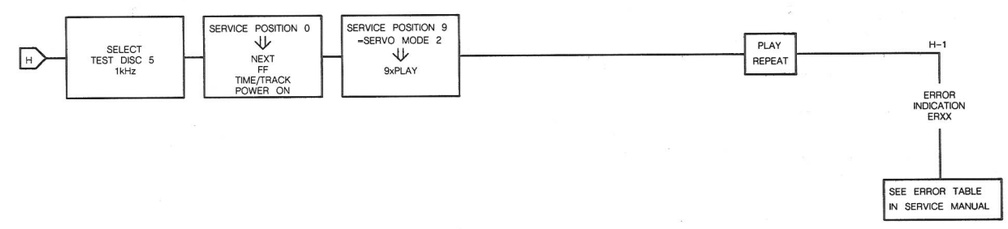








NOTE:BETWEEN SERVICE POSITION 5 AND 6 ONE SHOULD WAIT TO ALLOW THE CHANGER LOADING A DISC FROM THE CASSETTE



PRS.05914
T33/917

A2
µP–SIGNALS 6517

SIGNAL	MODE	◇			REMARKS
RESET	POWER ON	14		"LOW" TO "HIGH"	
X–TAL	STAND BY	13		4MHz	
$\overline{\text{MUTE}}$	STAND BY	67		"LOW"	

MDA.02147
T07–916

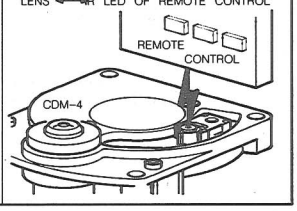
D1
B0,B1,B2,B3 SIGNALS

SIGNAL	MODE	◇			REMARKS
B0	SERVICE POSITION 6 OR 7; NEXT >	36		"LOW"	
	SERVICE POSITION 6 OR 7; PREVIOUS <	36		"LOW"	
B1	SERVICE POSITION 6 OR 7; NEXT >	34		"HIGH"	
	SERVICE POSITION 6 OR 7; PREVIOUS <	34		"HIGH"	
B2	SERVICE POSITION 6 OR 7; NEXT >	33		"LOW"	
	SERVICE POSITION 6 OR 7; PREVIOUS <	33		"HIGH"	
B3	SERVICE POSITION 6 OR 7; NEXT >	32		"HIGH"	
	SERVICE POSITION 6 OR 7; PREVIOUS <	32		"HIGH"	

MDA.02142
T07–916

D2
CHECK OF THE PHOTODIODES

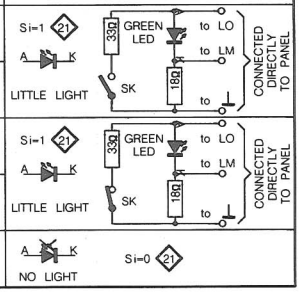
STEP	SIGNAL	MODE	◇				REMARKS
1	–	STAND BY	◇4 ◇6 ◇7 ◇5	–	–	SEE DRAWING 38314A12	SIGNAL DEPENDS ON DISTANCE LENS ← IR LED OF REMOTE CONTROL



MDA.02144
T07–918

D3
CHECK OF LASER SUPPLY (WITH DEMOUNTED CDM AND ADDITIONAL CIRCUIT)

STEP	SIGNAL	MODE	◇				REMARKS
1	LO	SERV. POS. 8	◇8 (V)	–	1.8 < V < 2.3	–	
	LM	SK	◇11 (V)	–	170 < mV < 220	–	
2	LO	SERV. POS. 8	◇8 (V)	–	1.8 < V < 2.3	–	
	LM	SK	◇11 (V)	–	170 < mV < 220	–	
3	LO	POWER ON	◇8 (V)	–	0V ± 0.2V	–	



MDA.02143
T07–918

D3
LASER CURRENT ADJUSTMENT

STEP	SIGNAL	MODE	◇				REMARKS
1	–	POWER OFF	◇11 (Ω)	R3810	1kΩ	–	PRE–ADJUSTMENT OHMIC VALUE
2	EYE–PATTERN HF	TEST DISC 5 PLAY	◇17 0V GND	–	–	A	IF NO SIGNAL SEE: "START UP PROCEDURE"
3	LASER CURRENT ≙ VOLTAGE ACROSS R3501	TEST DISC 5 PLAY TRACK 1	◇1 (V) ◇2	R3810	50mV DC	–	–

MDA.02130
T07–916

D4
FOCUS ACTION

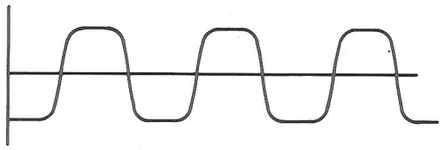
SIGNAL	MODE	◇			REMARKS
SI/$\overline{RD}$	SERVICE POSITION 7 WHEN REPEATING START UP PROCEDURE	21		PULS "LOW"	SEE DRAWING: MDA.01403
FE	NO DISC, SERVICE POSITION 7 WHEN REPEATING START UP PROCEDURE	26			SEE DRAWING: MDA.01413
FE-LAG	TEST DISC 5A,	27			SEE: ADJUSTMENT OF FOCUS-OFFSET

MDA.02150
T07-918

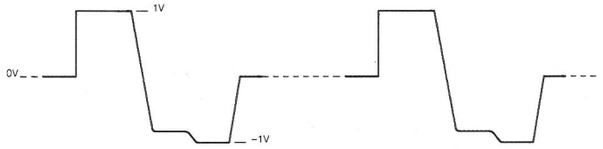
ADJUSTMENT OF FOCUS-OFFSET

STEP	SIGNAL	MODE	◇				REMARKS
1	—	POWER ON	—	R3821	—	—	ADJUST FOR OPTICAL MID-POSITION
2	FE LAG	SERVICE POS "8" TEST DISC 5 PLAY	27	R3821	400mV ±40mV DC	—	FINE ADJUSTMENT

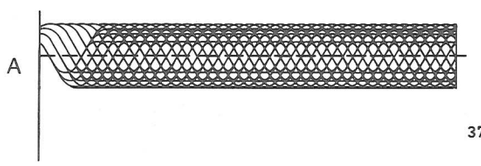
MDA.02129
T07-915



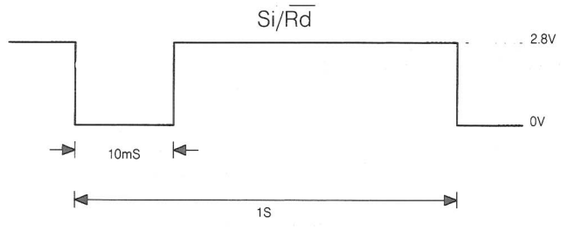
38 314 A12



MDA.01413
T33/823



37 017 B8



MDA.01403
T33/821

DAC IC

SIGNAL	MODE	◇			REMARKS
OUTPUT OF OP-AMP	DISC, PLAY	94		LF SIGNAL	LEFT CHANNEL
OUTPUT OF OP-AMP	DISC, PLAY	95		LF SIGNAL	RIGHT CHANNEL
WSBD		85			SEE DRAWING 38848C12
CLBD		87			
DABD		86		ACTIVITY	POSITION PLAY

MDA.01392
T-08 841

E1
HIGH SPEED DISC ROTATION

SIGNAL	MODE	◇			REMARKS
MC	TEST DISC 5, PLAY OR SERVICE POSITION 8	81			
HFI	TEST DISC 5, PLAY OR SERVICE POSITION 9	70			SEE DRAWING: 37017B8
X-tal	TEST DISC 5A, PLAY OR SERVICE POSITION 8	16		11.28MHz	
$\overline{TL}$	TEST DISC 5, PLAY OR SERVICE POSITION 8	13		PULSES "LOW"	SEE DRAWING: 38849A12

MDA.02131
T07-915

E2
TRACK FOLLOWING

SIGNAL	MODE	◇			REMARKS
RE dig	TEST DISC 5, PLAY OR SERVICE POSITION 3	37		2mS	
RE lag	TEST DISC 5, PLAY OR SERVICE POSITION 3	41	APPROX 2.5V DC		
RAD-	TEST DISC 5A, PLAY OR SERVICE POSITION 3	42			
RAD+	TEST DISC 5A, PLAY OR SERVICE POSITION 3	40			
C osc1	TEST DISC 5, PLAY OR SERVICE POSITION 3	30		650Hz	
C osc2	TEST DISC 5, PLAY OR SERVICE POSITION 3	31		650Hz	

MDA.02141
T07-916

F1
JUMP TO TRACK 1

SIGNAL	MODE	◇			REMARKS
$\overline{DODS}$	TEST DISC 5A, SEARCH ≫ OR SEARCH ≪	19			SEE DRAWING: MDA.01143
$\overline{PLLH}$	TEST DISC 5A: TRACK 15, PLAY	23		PULSES "LOW"	SEE DRAWING: MDA.00240 WHEN THE DISC IS SLOWLY BRAKED BY HAND
QRA	TEST DISC 5A, PLAY	75			SEE DRAWING: MDA.00453
QDA	TEST DISC 5A, PLAY	77			
QCL	TEST DISC 5A, PLAY	76			
SWAB	TEST DISC 5A, PLAY	78			SEE DRAWING: MDA.00239
SCAB	TEST DISC 5A, PLAY	79			SEE DRAWING: MDA.00239
SDAB	TEST DISC 5A, PLAY	80			SEE DRAWING: MDA.00239

MDA.02134
T07-915

DECODER, NO AUDIO OUTPUT LEFT > RIGHT

SIGNAL	MODE	◇			REMARKS
X-IN	DISC, PLAY	69		11.28MHz	
WSAB	DISC, PLAY	71			SEE DRAWING: 38847C12
CLAB	DISC, PLAY	72			SEE DRAWING: 38847C12
DAAB	DISC, PLAY	73		ACTIVITY	
EFAB	TEST DISC 5A,	74		PULSES	WHEN THE DISC IS SLOWLY BRAKED BY HAND
SWAB	DISC, PLAY	78			SEE DRAWING: MDA.00239
SCAB	DISC, PLAY	79			SEE DRAWING: MDA.00239
SDAB	DISC, PLAY	80			SEE DRAWING: MDA.00239
DEEM	TEST DISC 5: TRACK 14: PLAY TRACK 15: PLAY	84		"LOW" "HIGH"	
MUTE	DISC, PAUSE,NEXT OR PREVIOUS	67		"LOW"	

MDA.02145
T07-918

F5
DEEM CIRCUIT

SIGNAL	MODE	◇			REMARKS
DEEM	TEST DISC 5A: TRACK 14: PLAY TRACK 15: PLAY	84		"LOW" "HIGH"	SEE TESTPOINT 97 AND 96 ON DEEM CIRCUIT
TESTPOINT 97	TEST DISC 5A TRACK 14	97		LF SIGNAL	
TESTPOINT 97	TEST DISC 5A TRACK 15	97		NO SIGNAL	
TESTPOINT 96	TEST DISC 5A TRACK 14	96		LF SIGNAL	
TESTPOINT 96	TEST DISC 5A TRACK 15	96		NO SIGNAL	

MDA.02133
T07-916

F6
SPECIFICATIONS MEASUREMENT

SIGNAL	MODE	◇			REMARKS
BU2-L	TEST DISC 3, PLAY, TOTAL HARMONIC DISTORSION	FILTER OUTPUT	⊢—⊣		SEE DRAWING: 30459A12
BU2-R	TEST DISC 3, PLAY, TOTAL HARMONIC DISTORSION	FILTER OUTPUT	⊢—⊣		SEE DRAWING: 30459A12
BU2-L	TEST DISC 3, PLAY, SIGNAL-TO-NOISE RATIO	FILTER OUTPUT	⊢—⊣		SEE DRAWING: 30459A12
BU2-R	TEST DISC 3, PLAY, SIGNAL-TO-NOISE RATIO	FILTER OUTPUT	⊢—⊣		SEE DRAWING: 30459A12

⊢—⊣ SEE TECHNICAL DATA

MDA.02132
T07-916

ERROR TABLE

System errors

Indication	Cause	Check
Er 02	No $\overline{TL}$ pulse at start-up	TL, HF, Photodiode signal processor, CD disc present.
Er 03	No lead-in track found	CD disc, radial armposition, REdig, radial error processor
Er 05	$\overline{TL}$ pulse > 50 msec in Play	CD disc, HF in, Photodiodes
Er 06	No $\overline{TL}$ pulse within 0,5 sec during track jumping.	RE-lag circuit
Er 07	Subcoding error during Play	HF
Er 08	TOC error	CD disc

Operating errors

Er 13 Scate error
Er 21 Jump calculation error
Er 34 Programme survey requested; nogramme present
Er 35 The programme memory is full
Er 36 The programmed track is not present on this CD disc
Er 37 The selected track is not present on this CD disc
Er 60 End of the Fast forward search motion
Er 61 End of the Fast Reverse search motion
Er 65 Direct disc access, direct key access, disc up/down until programmed play
Er 66 Direct disc access, disc up/down with single cartridge
Er 67 Disc up/down not possible (only one or no disc) Direct disc access not possible (no disc)
Er 70 Play or shuffle while no cartridge in loading
Er 71 No Playable track in shuffle mode
Er 72 Direct disc access, direct key access, review for disc up/down while in shuffle mode.

TRAY ERROR TABLE

Display digits	t	digit 1	digit 2	digit 3

Digit 1

Indication	Operating	If not check
4	Cass. is moving up	opto coupler or position 114
5	Stop position	switch S6
6	Cass. is moving up	motor or IC 7931
7	to position 6	
8	Cass. is moving down	opto coupler or position 114
9	stop position	switch S6
A	Cass. is moving down	motor or IC7931
B	to another position	
C	Cassette is not moving	
D		
E	Stop position	
F		

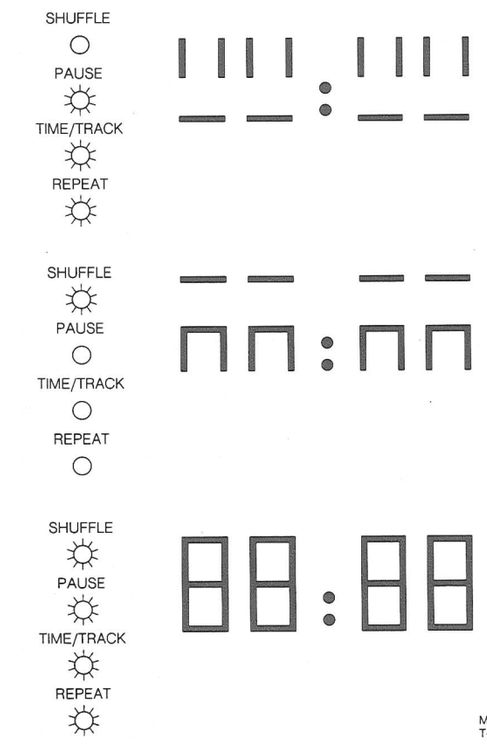
Digit 2

Indication	Operating	If not check
4	Disc on CDM	S2
5	Disc is moving between CDM and cass.	S1, disc motor or IC7931
6	Cass. in eject position	Tray motor or IC7932
7	Cass. moving out	
8	Disc on CDM	S2
9	Disc is moving between cass. and C.D.M.	S1, disc motor or IC7931
A	Cass. in loading position	Tray motor or IC7932
B	Cass. moving in	
C	Disc on C.D.M.	S2
D	Disc is moving between cass. and C.D.M.	S1, disc motor or IC7931
E	Tray motor in stop position	
F		

Digit 3

Indication	Operating	If not check
2	Single cass. in loading not pushed in	S3
3	Multi cass. in loading not pushed in	S3
4	No cass. in loading	S5
5	No cass. in loading	
6	Single cass. in loading and completely pushed in	S3, S4
7	Multi cass. in loading and completely pushed in	S3, S4

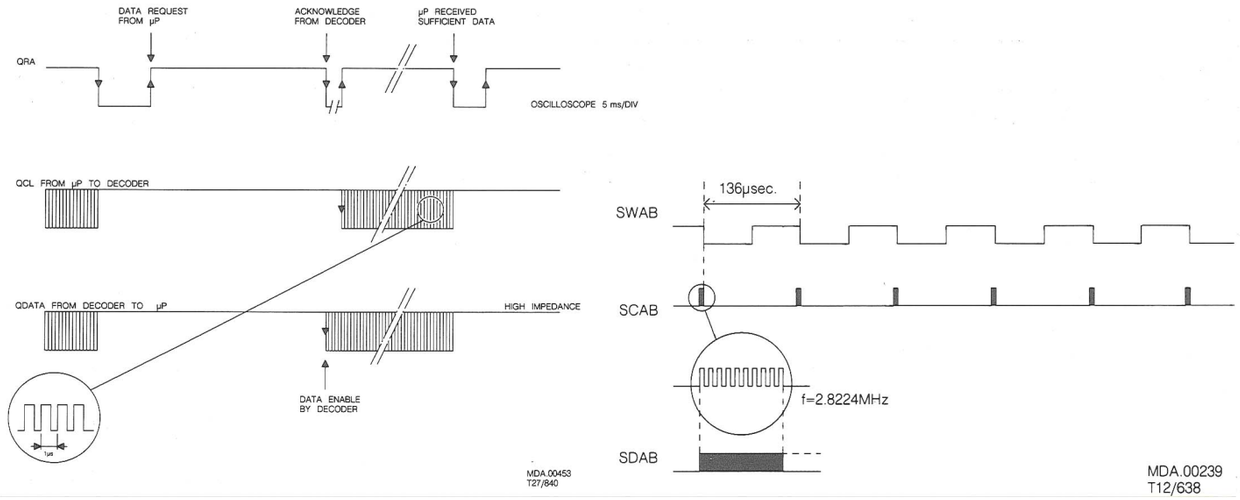
DISPLAY TEST PATTERNS

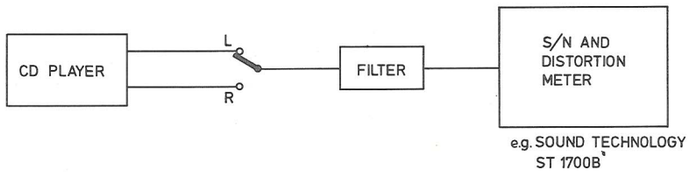


MDA.02139
T-26/916

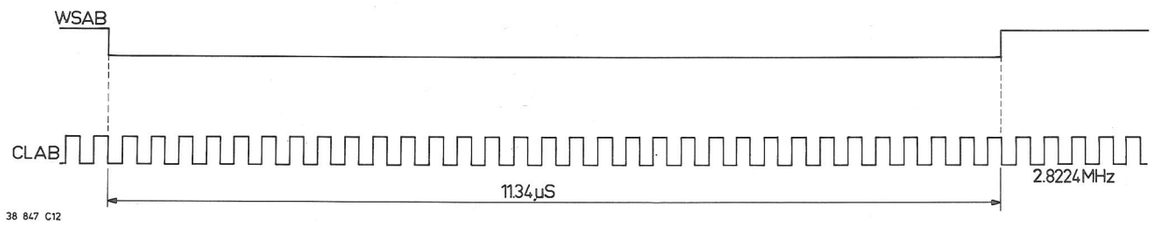
KEYBOARD TABLE

KEY	start display 20 → 00
PROGRAM	15
OPEN/CLOSE	14
SKIP BACK	16
SKIP FORWARD	24
SEARCH DOWN	22
SEARCH UP	23
STOP	21
TIME/TRACK	18
REPEAT	17
SHUFFLE	11
DISC 1	3
DISC 2	4
DISC 3	5
DISC 4	6
DISC 5	7
DISC 6	8





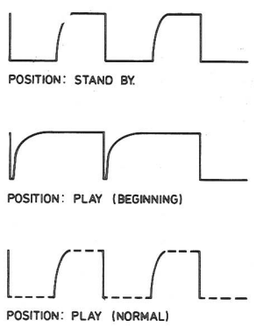
30 459 A12



38 847 C12

POSITION PLAYER	POWER ON	SERVICE POSITION 3 POSITION PLAY	PLAY	SEARCH, PAUSE
$\overline{\text{DODS}}$ SIGNAL	"LOW"	"HIGH"	"HIGH"	

MDA.01143
T12 –651



38 849 A12

MDA.00240
T07–804

Circuit: Photodiode processor

	signal	pin	standby	play
7800	V+	2	4.9 V	4.9 V
	Si/RDNOT	6	L	–
	PLLHNOT	10	L	H
	TLNOT	11	H	H
	DODSNOT	12	L	H
	Vbb	13	10 V	10 V
7801		C	10.3 V	10.2 V
		B	0 V	2.8 V
		E	0 V	2.3 V
	LO	11-9	0 V	1.8 V
7803		C	11 V	11 V
		B	10.6 V	10.6 V
		E	10 V	10 V

Circuit: Radial- and Focusdrivers

6830	K	7.8 V	7.8 V
7802	2	10.8 V	10.8 V
	5	5 V	5 V
	6	5 V	5 V
	7	5 V	5 V
	8	5 V	5 V
7843	2	10.8 V	10.8 V
	5	5 V	5 V
	6	5 V	5 V
	7	5 V	5 V
	8	5 V	5 V

Circuit: Radial Errorprocessor

7840	Vdd	1	5 V	5 V
	DIV4	6	5 V	5 V
	B3	8	H	–
	B2	9	H	–
	B1	10	H	–
	B0	11	L	–
	Vext+	12	10 V	10 V
	Vref	20	2.5 V	2.5 V
7842		E	2.5 V	2.5 V
		B	4.9 V	4.9 V

Circuit: Rotation Motor

7873	2	10.8 V	10.8 V
	5	3.2 V	3.2 V
	6	3.2 V	3.2 V
	7	3.2 V	3.2 V
	8	3.2 V	3.2 V

Circuit: Supply

	+9	11 V	11 V
	+5	5 V	5 V
Vac		10 Vac	10 Vac

Circuit: Microprocessor

7930	RESET	1	4.6 V	4.6 V
	RC 5	2	H	H
	+5	3	5 V	5 V
	MUTENOT	4	L	H
	AMNOT	9	L	H
	B3	13	H	–
	B2	14	H	–
	B1	15	H	–
	B0	16	L	–
	Si/RDNOT	17	L	–
	TLNOT	18	H	H
	DODSNOT	19	L	H
	DM6	25	H	H
	DM5	26	H	H
	TM6	27	H	H
	TM5	28	H	H
	START	35	L	H
	TLNOT	37	H	H
		40	4.6 V	4.6 V

Circuit: Loading

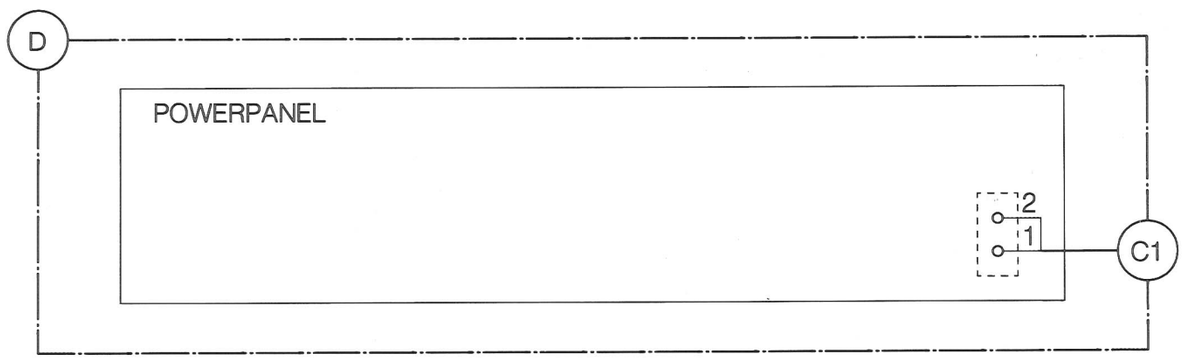
7931	2	0.6 V	0.6 V
	4	0.5 V	0.5 V
	5	H	H
	6	H	H
		10.6 V	10.6 V
	8	10.6 V	10.6 V
	10	0.6 V	0.6 V
7932	2	0.6 V	0.6 V
	4	0.5 V	0.5 V
	5	H	H
	6	H	H
	7	10.6 V	10.6 V
	8	10.6 V	10.6 V
	10	0.6 V	0.6 V

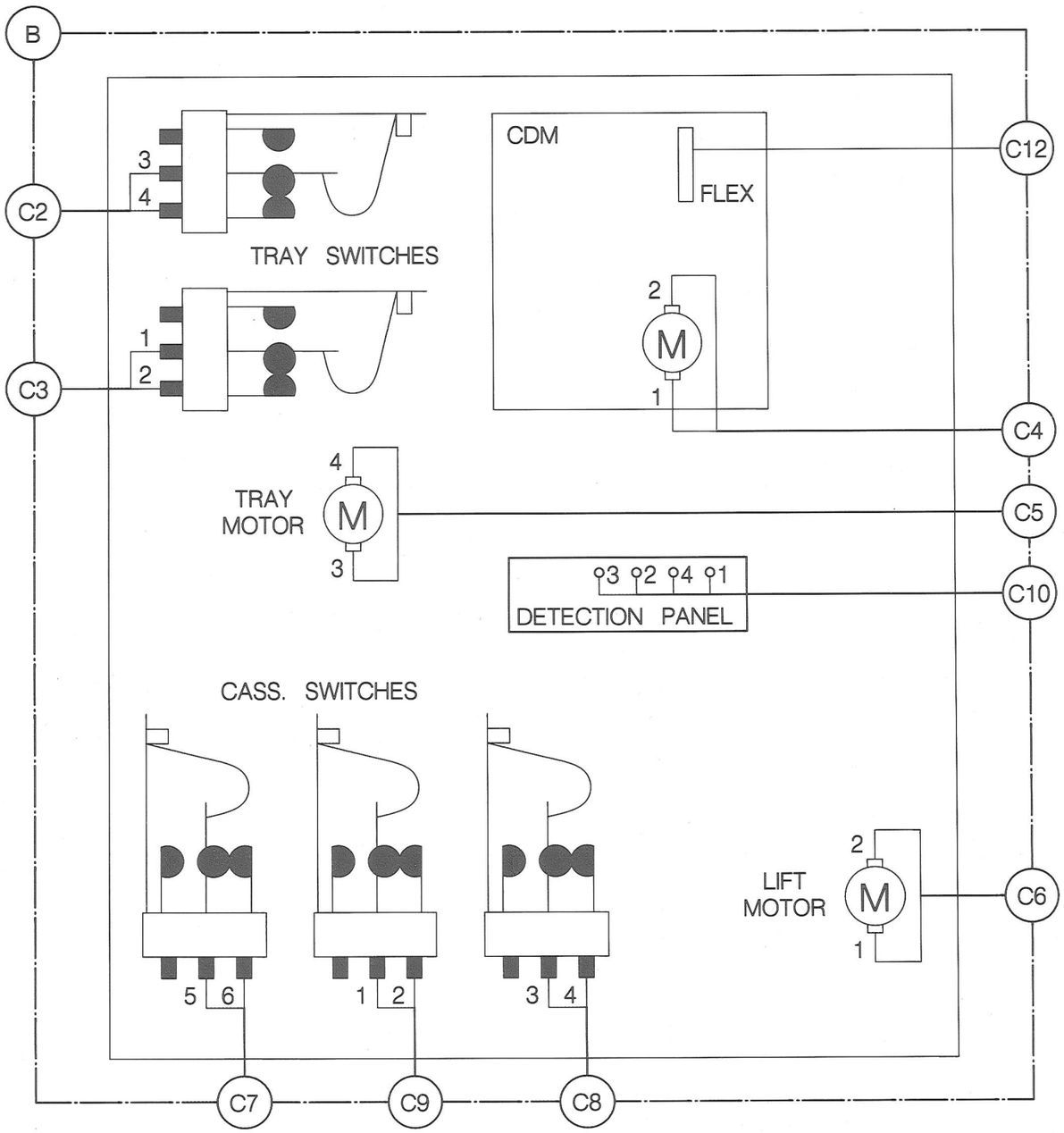
Circuit: Audio output

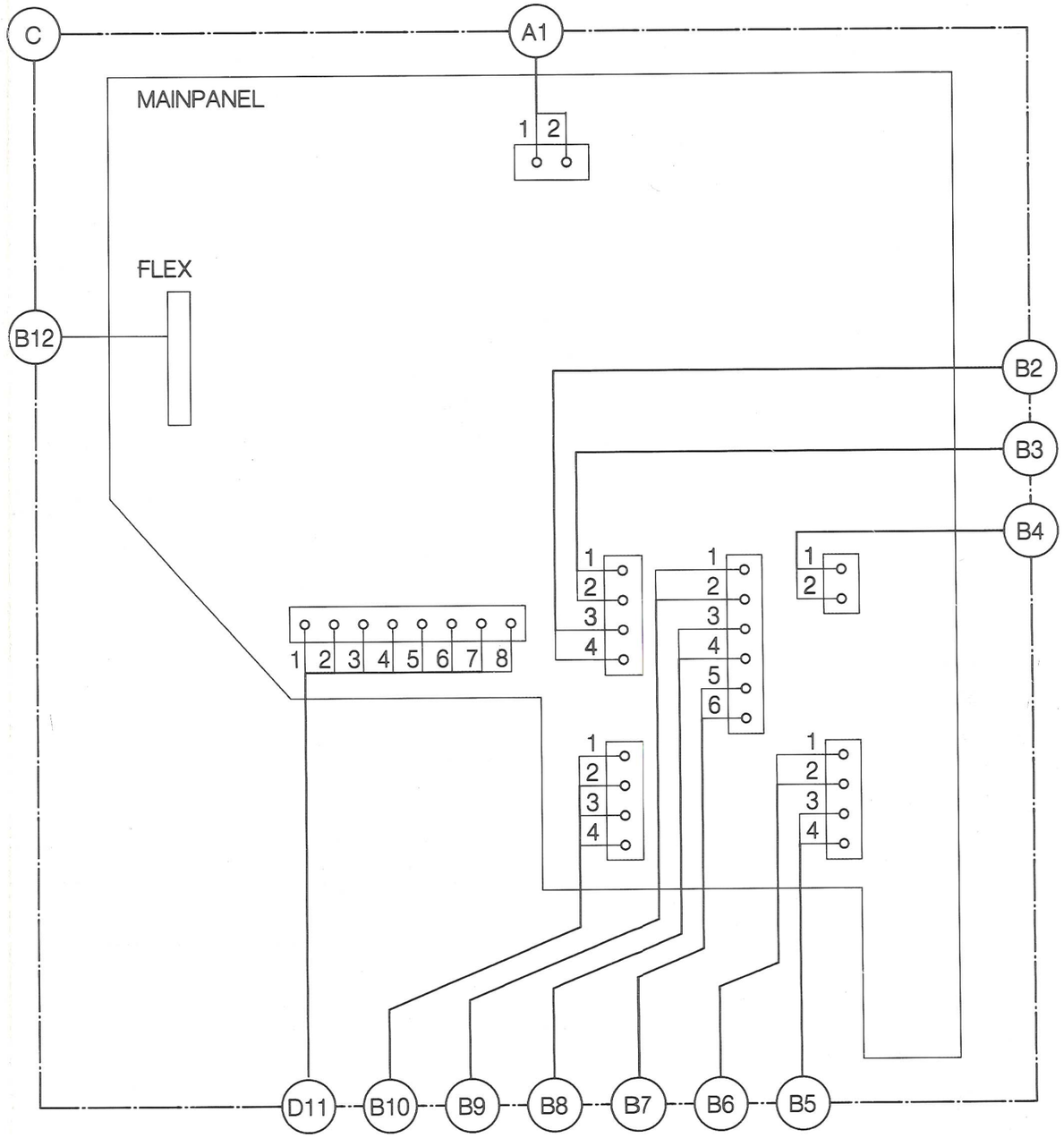
2903		+	7.3 V	7.3 V
7890	V+	5	4.9 V	4.9 V
	Vref	7	2.2 V	2.2 V
7891		1	4 V	–
		7	4 V	–
7895		E	7.5 V	7.5 V

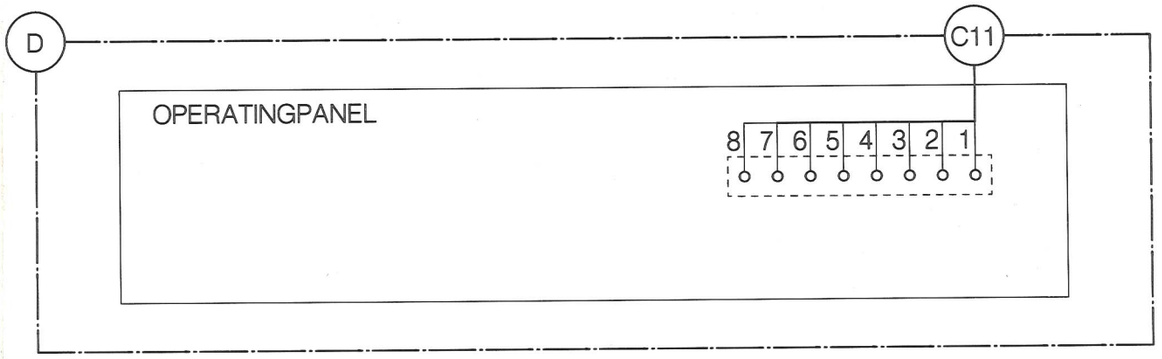
Circuit: Decoding

7870	EFAB	1	H	L
	Vdd	5	4.9 V	4.9 V
	MUTENOT	18	L	H
	Vbb	28	4.9 V	4.9 V
	PD/OC	29	1.8 V	2.2 V
	Iref	30	1.5 V	1.5 V
	HFI	32	2.1 V	–
	HFD	34	0 V	3.8 V
	AMNOT	35	L	H
	CRI	36	H	H
	DEEM	41	L	L









MDA.02151
T33/917

CASSETTE

401
402
403
404
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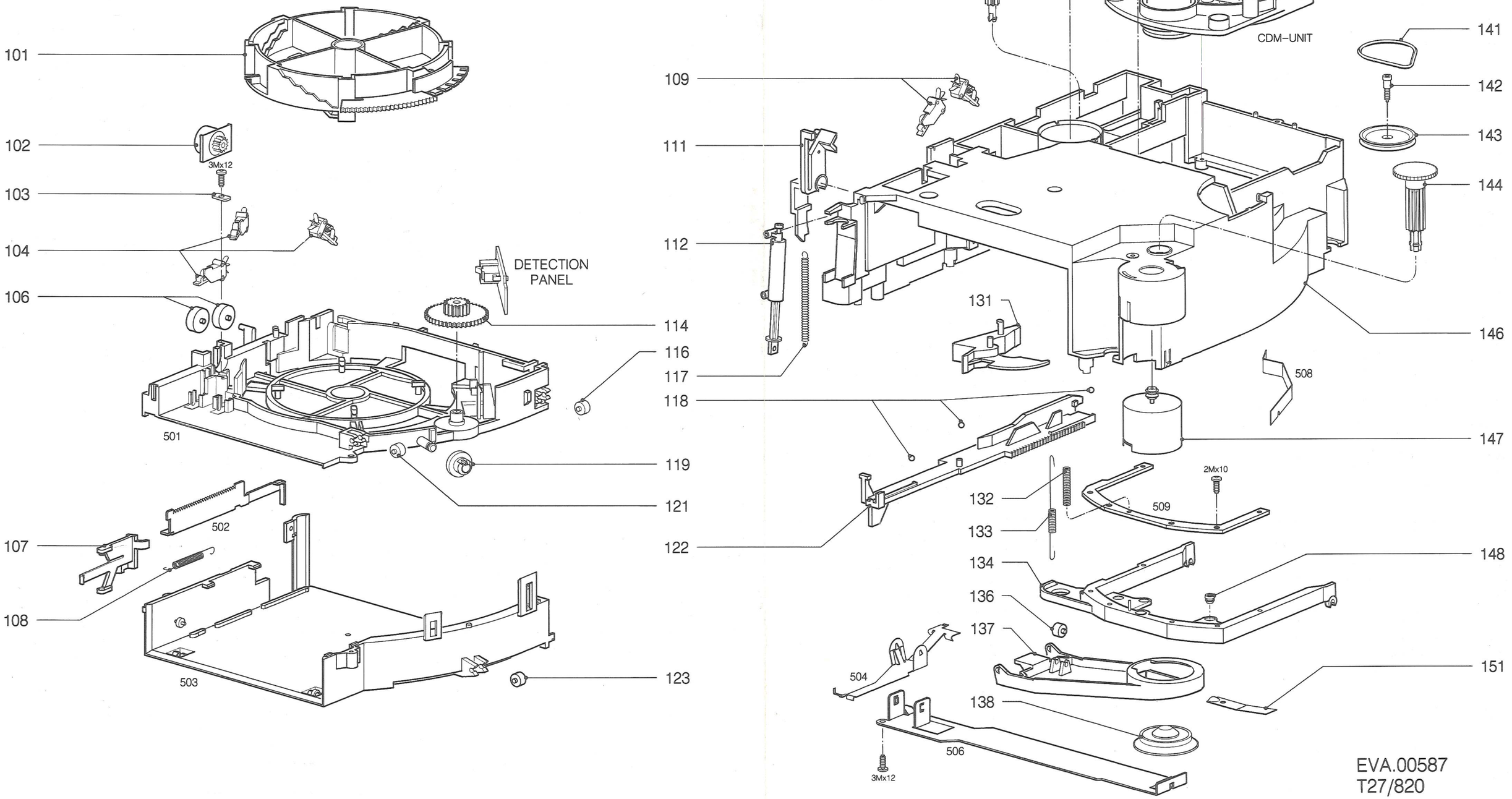
3x12
3x25
3x 25
3x 9,5
3x 10

TS 531

CS 22 569

EXPLODED VIEW

CD–CHANGER MODULE

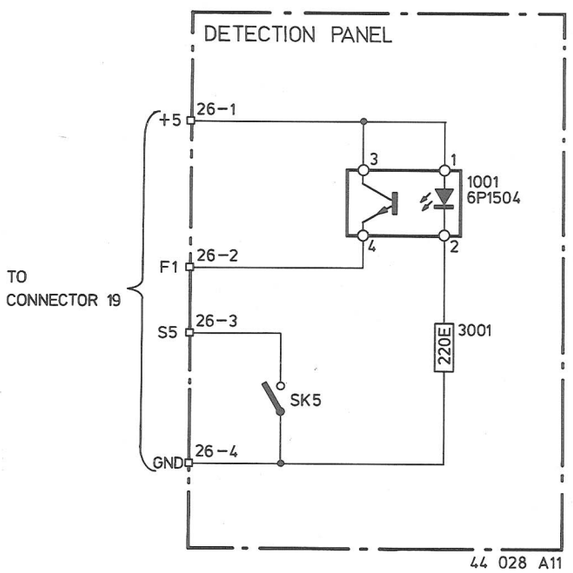


EVA.00587
T27/820

101	4822 528 10714	
102	4822 529 10213	
103	4822 466 80671	
104	4822 271 30628	
106	4822 528 90638	
107	4822 402 61212	
108	4822 492 32888	
109	4822 271 30628	
111	4822 402 61211	
112	4822 529 10214	
114	4822 522 32478	
116	4822 528 90639	
117	4822 492 32889	
118	4822 520 40241	
119	4822 528 70539	
121	4822 528 90639	
122	4822 535 80787	
123	4822 528 90639	
124	4822 361 21141	
126	4822 358 30852	
127	4822 528 81232	
128	4822 522 32482	
129	4822 522 32481	
131	4822 402 61208	
132	4822 492 52017	
133	4822 492 32887	
134	4822 402 61209	
136	4822 528 90639	
137	4822 466 92264	
138	4822 532 61112	
139	4822 691 30215	
141	4822 358 30853	
142	4822 535 80788	
143	4822 528 81231	
144	4822 522 32479	
146	4822 520 10665	
147	4822 361 20998	
148	4822 325 60317	
151	4822 492 70033	

DETECTION PANEL

4822 276 12491	Switch assy SSCTL 1	SK5
4822 130 32114	Opto-coupler GP-1S04	1001
4822 116 52407	SFR25-220R	3001



401	4822 444 10134	
402	4822 402 50274	
403	4822 410 26986	
404	4822 410 26987	
406	4822 410 26988	
407	4822 444 40297	
408	4822 450 61327	
409	4822 444 60617	
411	4822 492 70189	
412	4822 462 71591	
413	4822 276 11567	
414	4822 146 30759	
416	4822 535 80791	
417	4822 325 80226	
419	4822 502 13144	
only	AK791/01	
428	4822 444 60647	
only	AK791/17	
407	4822 444 40325	
408	4822 450 61443	
427	4822 321 10445	
only	AK796/17	
401	4822 256 91534	
407	4822 444 40326	
408	4822 450 61443	
427	4822 321 10445	
421	4822 256 91388	
422	4822 276 12465	
423	4822 462 41355	
424	4822 462 40683	
426	4822 265 20291	
427	4822 321 10529	
428	4822 444 60616	
431	4822 321 22873	
432	4822 492 63051	
433	4822 267 31052	
434	4822 267 31051	

2800	5322 122 32654	22 nF 50 V
2801	4822 124 41395	33 µF 16 V
2802	4822 122 10177	10 nF 25 V
2803	4822 122 32542	47 nF 63 V
2804	4822 124 41397	47 µF 25 V
2805	5322 122 32268	470 pF 50 V
2806	4822 122 33889	2,2 nF 63 V
2807	4822 122 32542	47 nF 63 V
2808	5322 122 32531	100 pF 50 V
2809	4822 122 10177	10 nF 25 V
2810	5322 122 34123	1 nF 50 V
2811	4822 122 32927	220 nF
2812	4822 121 51252	470 nF 100 V
2813	5322 122 34123	1 nF 50 V
2814	4822 124 41395	33 µF 16 V
2815	4822 122 33575	220 pF NPO 50 V
2817	4822 121 51252	470 nF 100 V
2818	4822 122 33217	2222 590 16623
2819	5322 121 42498	680 nF 63 V
2821	4822 122 32542	47 nF 63 V
2822	4822 124 41396	220 µF 16 V
2840	5322 122 34098	10 nF 50 V
2841	4822 121 51321	8,2 µF 63 V
2842	4822 121 51321	8,2 µF 63 V
2843	4822 122 32927	220 nF
2844	5322 122 34123	1 nF 50 V
2845	4822 124 41395	33 µF 16 V
2846	5322 121 42661	330 nF 63 V
2847	4822 121 42408	220 nF 63 V
2848	5322 121 42489	33 nF 100 V
2849	4822 122 33342	33 nF 63 V
2850	4822 122 32893	100 nF 50 V
2851	4822 122 32542	47 nF 63 V
2852	4822 124 41396	220 µF 16 V
2853	5322 121 42498	680 nF 63 V
2854	4822 122 32542	47 nF 63 V
2870	4822 122 32542	47 nF 63 V
2871	4822 124 41395	33 µF 16 V
2872	5322 122 32659	33 pF 50 V
2873	5322 122 32659	33 pF 50 V
2874	4822 122 10175	2,2 nF 50 V
2875	4822 122 31772	47 pF 50 V
2876	5322 121 42502	390 nF 63 V
2877	4822 122 32542	47 nF 63 V
2878	4822 121 41854	150 nF 63 V
2879	4822 124 41399	2,2 µF 63 V
2880	4822 122 32542	47 nF 63 V
2881	5322 121 42661	330 nF 63 V
2882	4822 122 33893	18 nF 63 V
2883	4822 124 41396	220 µF 16 V
2884	4822 122 33891	3,3 nF 63 V
2885	4822 124 41395	33 µF 16 V
2890	4822 124 41395	33 µF 16 V
2891	4822 122 32542	47 nF 63 V
2893	4822 124 41395	33 µF 16 V
2894	4822 122 32542	47 nF 63 V
2895	4822 122 10174	1,5 nF 50 V
2896	4822 122 10174	1,5 nF 50 V
2897	4822 124 22407	4.7 µF 63 V
2898	4822 124 22407	4.7 µF 63 V
2899	4822 122 33891	3,3 nF 63 V
2900	4822 122 33891	3,3 nF 63 V
2901	4822 122 33342	33 nF 63 V
2902	4822 122 33342	33 nF 63 V
2903	4822 124 41398	1 µF 63 V
2904	4822 124 41396	220 µF 16 V
2930	4822 124 41395	33 µF 16 V

2931	4822 122 32542	47 nF 63 V
2933	5322 122 34098	10 nF 50 V
2934	5322 122 34098	10 nF 50 V
2936	4822 122 32893	100 nF 50 V
2937	4822 124 22407	4.7 µF 63 V
2950	4822 124 22406	47 µF 10 V
2970	4822 124 21735	4700 µF 16
2971	4822 122 32542	47 nF 63 V
2972	4822 122 32542	47 nF 63 V
2973	4822 122 32542	47 nF 63 V
2974	4822 122 32542	47 nF 63 V
2980	4822 122 32542	47 nF 63 V
2983	4822 122 32542	47 nF 63 V
2984	4822 122 32542	47 nF 63 V

3800	4822 116 52426	4.7 kΩ
3801	4822 111 90214	100 kΩ
3802	4822 116 80311	4.7 Ω
3803	4822 111 30513	15 Ω
3804	4822 116 52456	12 kΩ
3805	4822 116 52389	100 Ω
3806	4822 111 91516	1 kΩ
3807	4822 116 52464	24 kΩ
3808	4822 111 91534	5.6 kΩ
3809	4822 116 90339	220 Ω
3810	4822 101 10685	4.7 kΩ
3811	4822 111 30515	18 Ω
3812	4822 116 80563	12 Ω
3813	4822 116 90441	100 Ω
3814	4822 111 91516	1 kΩ
3817	4822 116 52454	11 kΩ
3818	4822 116 90442	120 kΩ
3819	4822 116 90459	150 kΩ
3820	4822 116 90345	330 kΩ
3821	4822 100 20522	22 kΩ LIN
3822	4822 116 90342	27 kΩ
3823	4822 116 52478	82 kΩ
3824	4822 116 52478	82 kΩ
3825	4822 111 30519	27 Ω
3827	4822 116 90339	220 Ω
3828	4822 116 90339	220 Ω
3829	4822 111 30483	1 Ω
3830	4822 116 52389	100 Ω
3831	4822 111 91516	1 kΩ
3840	4822 116 52476	68 kΩ
3841	4822 116 90464	6.8 kΩ
3842	4822 116 90446	470 Ω
3843	4822 116 80881	220 kΩ
3844	4822 116 80659	1.5 kΩ
3845	4822 116 52472	47 kΩ
3846	4822 116 52458	15 kΩ
3847	4822 111 91521	18 kΩ
3848	4822 111 90197	220 kΩ
3849	4822 116 52471	43 kΩ
3850	4822 116 80664	12 kΩ
3851	4822 116 81029	390 Ω
3852	4822 116 52348	2.2 Ω
3853	4822 116 80664	12 kΩ
3854	4822 116 80664	12 kΩ
3855	4822 116 80664	12 kΩ
3856	4822 116 90471	33 Ω
3857	4822 111 30483	1 Ω
3858	4822 111 91522	2.2 kΩ
3861	4822 116 80664	12 kΩ
3862	4822 116 81029	390 Ω

3869	4822 116 52204	1 kΩ
3870	4822 116 80311	4.7 Ω
3871	4822 116 52408	2.2 kΩ
3872	4822 111 91523	22 kΩ
3873	4822 111 91533	560 Ω
3874	4822 116 90464	6.8 kΩ
3875	4822 111 91506	75 Ω
3876	4822 111 91651	1 MΩ
3877	4822 111 91532	4.7 kΩ
3878	4822 116 52472	47 kΩ
3879	4822 111 91516	1 kΩ
3880	4822 111 90161	470 kΩ
3881	4822 111 90565	180 kΩ
3882	4822 111 91517	10 kΩ
3883	4822 111 90513	330 kΩ
3884	4822 116 90442	120 kΩ
3885	4822 116 90443	180 kΩ
3886	4822 111 90565	180 kΩ
3887	4822 111 91661	47 kΩ
3888	4822 116 90342	27 kΩ
3889	4822 111 30483	1 Ω
3890	4822 111 30497	3.9 Ω
3891	4822 116 80311	4.7 Ω
3892	4822 116 81029	390 Ω
3893	5322 111 90138	390 Ω
3894	4822 111 91498	15 kΩ
3895	4822 111 91522	2.2 kΩ
3896	4822 111 91522	2.2 kΩ
3897	4822 111 91523	22 kΩ
3898	4822 111 91523	22 kΩ
3899	4822 111 30513	15 Ω
3900	4822 111 91516	1 kΩ
3901	4822 111 91516	1 kΩ
3902	4822 116 52472	47 kΩ
3903	4822 111 90543	47 kΩ
3904	4822 116 90446	470 Ω
3905	4822 116 90446	470 Ω
3906	5322 111 90092	1 kΩ
3907	4822 116 52204	1 kΩ
3908	4822 111 91517	10 kΩ
3909	4822 116 90345	330 kΩ
3910	4822 116 52215	220 Ω
3930	4822 116 52354	27 Ω
3931	4822 116 52463	22 kΩ
3932	4822 116 81408	10 MΩ
3936	4822 111 30483	1 Ω
3939	4822 111 90251	22 kΩ
3940	4822 111 91661	47 kΩ
3941	4822 111 91521	18 kΩ
3942	4822 111 91521	18 kΩ
3943	4822 111 90249	10 kΩ
3944	4822 111 90249	10 kΩ
3945	4822 111 90249	10 kΩ
3946	4822 111 90249	10 kΩ
3948	4822 111 90249	10 kΩ
3949	4822 111 90214	100 kΩ
3980	4822 116 80311	4.7 Ω
3981	4822 116 80311	4.7 Ω
3982	4822 116 80663	120 Ω
3983	4822 116 52426	4.7 kΩ
3984	4822 116 52426	4.7 kΩ
3985	4822 116 52426	4.7 kΩ
3986	4822 116 52426	4.7 kΩ
3987	4822 116 52426	4.7 kΩ
3988	4822 116 52426	4.7 kΩ

3989	4822 111 91518	100 kΩ
3990	4822 116 52234	100 kΩ
3991	4822 116 52234	100 kΩ

5930	4822 242 71644	11,289 600mc
5931	4822 242 72457	4,000 000 mc
5970	4822 146 30759	Mains transformer

6800	4822 130 34488	BZX79-C11
6830	4822 130 30861	BZX79-C7V5
6890	4822 130 32862	HZ7C2
6891	4822 130 30621	1N4148
6892	4822 130 30621	1N4148
6930	4822 130 30621	1N4148
6931	4822 130 33523	HZ7A3
6932	4822 130 32697	HZ6A3
6940	4822 130 30621	1N4148
6950	4822 130 30621	1N4148
6971	4822 130 80847	1N4001
6972	4822 130 80847	1N4001
6973	4822 130 80847	1N4001
6974	4822 130 80847	1N4001
6980	4822 130 81007	LT3P82A
6981	4822 130 81007	LT3P82A
6982	4822 130 81009	LT3H83A
6983	4822 130 81009	LT3H83A
6984	4822 130 90551	Display

7800	4822 209 60462	TDA8808AT/C3
7801	5322 130 44779	BC338-40
7802	4822 209 70705	L272MH
7803	5322 130 41982	BC848B
7840	4822 209 73235	TDA8809T/02
7841	5322 130 42136	BC848C
7842	5322 130 41983	BC858B
7843	4822 209 70705	L272MH
7870	4822 209 60289	SAA7310GP
7871	4822 209 70422	MN4264-15
7873	4822 209 70705	L272MH
7874	4822 130 42513	BC858C
7875	5322 130 41982	BC848B
7890	4822 209 73236	TDA1543/N1
7891	4822 209 83274	NJM4560D
7893	5322 130 41982	BC848B
7894	5322 130 41982	BC848B
7895	5322 130 41983	BC858B
7896	5322 130 41982	BC848B
7897	5322 130 41982	BC848B
7930	4822 209 60537	MC68HC05C8
7931	4822 209 82059	BA6109
7932	4822 209 82059	BA6109
7933	5322 130 41982	BC848B
7950	4822 209 80891	MC7805CT
7980	5322 209 11268	PC74HCT164P

© Chips 50 V NP0 S1206		
1 pF	5%	4822 122 32479
1,2 pF	5%	4822 122 33013
1,5 pF	5%	4822 122 31792
1,8 pF	5%	4822 122 32087
2,2 pF	5%	4822 122 32425
3,3 pF	5%	4822 122 32079
3,9 pF	5%	4822 122 32081
4,7 pF	5%	4822 122 32082
5,6 pF	5%	4822 122 32506
6,8 pF	5%	4822 122 32507
8,2 pF	5%	4822 122 32083
10 pF	5%	4822 122 31971
12 pF	5%	4822 122 32139
15 pF	5%	4822 122 32504
18 pF	5%	4822 122 31769
22 pF	10%	4822 122 31837
27 pF	5%	4822 122 31966
33 pF	5%	4822 122 31756
39 pF	5%	4822 122 31972
47 pF	5%	4822 122 31772
56 pF	5%	4822 122 31774
68 pF	5%	4822 122 31961
82 pF	10%	4822 122 31839
100 pF	5%	4822 122 31765
120 pF	5%	4822 122 31766
150 pF	5%	4822 122 31767
180 pF	2%	4822 122 31794
220 pF	5%	4822 122 31965
270 pF	5%	4822 122 32142
330 pF	10%	4822 122 31642
390 pF	5%	4822 122 31771
470 pF	5%	4822 122 31727
560 pF	5%	4822 122 31773
680 pF	5%	4822 122 31775
820 pF	5%	4822 122 31974
1 nF	10%	5322 122 31647
1,2 nF	5%	4822 122 31807
1,5 nF	10%	4822 122 31781
1,8 nF	10%	4822 122 32153
2,2 nF	10%	4822 122 31644
2,7 nF	10%	4822 122 31783
3,3 nF	10%	4822 122 31969
3,9 nF	10%	4822 122 32566
4,7 nF	10%	4822 122 31784
5,6 nF	10%	4822 122 31916
6,8 nF	10%	4822 122 31976
10 nF	10%	4822 122 31728
12 nF	10%	5322 122 31648
15 nF	10%	4822 122 31782
18 nF	10%	4822 122 31759
22 nF	10%	4822 122 31797
27 nF	10%	4822 122 32541
33 nF	10%	4822 122 31981
47 nF	10%	4822 122 32542
56 nF	10%	4822 122 32183
100 nF	10%	4822 122 31947
180 nF	10%	4822 122 32915
220 nF	20%	4822 122 32715

© Chips 0,125 W S1206 NP0		
0 E	jumper	4822 111 90163
1 E	5%	4822 111 90184
1,1 E	5%	4822 111 90377
1,2 E	5%	4822 111 90378
1,3 E	5%	4822 111 90379
1,5 E	5%	4822 111 90381
1,6 E	5%	4822 111 90382
1,8 E	5%	4822 111 90383
2 E	5%	4822 111 90384
2,2 E	5%	5322 111 90104
2,4 E	5%	4822 111 90385
2,7 E	5%	4822 111 90386
3 E	5%	4822 111 90387
3,3 E	5%	4822 111 90388
3,6 E	5%	4822 111 90389
3,9 E	5%	4822 111 90391
4,3 E	5%	4822 111 90392

© Chips 0,125 W S1206		
4,7 E	5%	5322 111 90376
5,1 E	5%	4822 111 90393
5,6 E	5%	4822 111 90394
6,2 E	5%	4822 111 90395
6,8 E	5%	4822 111 90254
7,5 E	5%	4822 111 90396
8,2 E	5%	4822 111 90397
9,1 E	5%	4822 111 90398
10 E	2%	5322 111 90095
11 E	2%	4822 111 90338
12 E	2%	4822 111 90341
13 E	2%	4822 111 90343
15 E	2%	4822 111 90344
16 E	2%	4822 111 90347
18 E	2%	5322 111 90139
20 E	2%	4822 111 90352
22 E	2%	4822 111 90186
24 E	2%	4822 111 90355
27 E	2%	5322 111 90105
30 E	2%	4822 111 90356
33 E	2%	4822 111 90357
36 E	2%	4822 111 90359
39 E	2%	4822 111 90361
43 E	2%	5322 116 90125
47 E	2%	4822 111 90217
51 E	2%	4822 111 90365
56 E	2%	4822 111 90239
62 E	2%	4822 111 90367
68 E	2%	4822 111 90203
75 E	2%	4822 111 90371
82 E	2%	4822 111 90124
91 E	2%	4822 111 90375
100 E	2%	5322 111 90091
110 E	2%	4822 111 90335
120 E	2%	4822 111 90339
130 E	2%	4822 111 90164
150 E	2%	5322 111 90098
160 E	2%	4822 111 90345
180 E	2%	5322 111 90242
200 E	2%	4822 111 90348
220 E	2%	4822 111 90178
240 E	2%	4822 111 90353
270 E	2%	4822 111 90154
300 E	2%	4822 111 90156
330 E	2%	5322 111 90106
360 E	1%	4822 111 90288
360 E	2%	4822 111 90358
390 E	2%	5322 111 90138
430 E	2%	4822 111 90362
470 E	2%	5322 111 90109
510 E	2%	4822 111 90245
560 E	2%	5322 111 90113
620 E	2%	4822 111 90366
680 E	2%	4822 111 90162
750 E	2%	5322 111 90306
820 E	2%	4822 111 90171
910 E	2%	4822 111 90372
1 k	2%	5322 111 90092
1,1 k	2%	4822 111 90336
1,2 k	2%	5322 111 90096
1,3 k	2%	4822 111 90244
1,5 k	2%	4822 111 90151
1,6 k	2%	5322 111 90265
1,8 k	2%	5322 111 90101
2 k	2%	4822 111 90165
2,2 k	2%	4822 111 90248
2,4 k	2%	4822 111 90289
2,7 k	2%	4822 111 90569
3 k	2%	4822 111 90198
3,3 k	2%	4822 111 90157
3,6 k	2%	5322 111 90107
3,9 k	2%	4822 111 90571
4,3 k	2%	4822 111 90167
4,7 k	2%	5322 111 90111
5,1 k	2%	5322 111 90268
5,6 k	2%	4822 111 90572
6,2 k	2%	4822 111 90545

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6,8 k	2%	4822 111 90544
7,5 k	2%	4822 111 90276
8,2 k	2%	5322 111 90118
9,1 k	2%	4822 111 90373
10 k	2%	4822 111 90249
11 k	2%	4822 111 90337
12 k	2%	4822 111 90253
13 k	2%	4822 111 90509
15 k	2%	4822 111 90196
16 k	2%	4822 111 90346
18 k	2%	4822 111 90238
20 k	2%	4822 111 90349
22 k	2%	4822 111 90251
24 k	2%	4822 111 90512
27 k	2%	4822 111 90542
30 k	2%	4822 111 90216
33 k	2%	5322 111 90267
36 k	2%	4822 111 90514
39 k	2%	5322 111 90108
43 k	2%	4822 111 90363
47 k	2%	4822 111 90543
51 k	2%	5322 111 90274
56 k	2%	4822 111 90573
62 k	2%	5322 111 90275
68 k	2%	4822 111 90202
75 k	2%	4822 111 90574
82 k	2%	4822 111 90575
91 k	2%	5322 111 90277
100 k	2%	4822 111 90214
110 k	2%	5322 111 90269
120 k	2%	4822 111 90568
130 k	2%	4822 111 90511
150 k	2%	5322 111 90099
160 k	2%	5322 111 90264
180 k	2%	4822 111 90565
200 k	2%	4822 111 90351
220 k	2%	4822 111 90197
240 k	2%	4822 111 90215
270 k	2%	4822 111 90302
300 k	2%	5322 111 90266
330 k	2%	4822 111 90513
360 k	2%	4822 111 90515
390 k	2%	4822 111 90182
430 k	2%	4822 111 90168
470 k	2%	4822 111 90161
510 k	2%	4822 111 90364
560 k	2%	4822 111 90169
620 k	2%	4822 111 90213
680 k	2%	4822 111 90368
750 k	2%	4822 111 90369
820 k	2%	4822 111 90205
910 k	2%	4822 111 90374
1 M	2%	4822 111 90252
1,1 M	5%	4822 111 90408
1,2 M	5%	4822 111 90409
1,3 M	5%	4822 111 90411
1,5 M	5%	4822 111 90412
1,6 M	5%	4822 111 90413
1,8 M	5%	4822 111 90414
2 M	5%	4822 111 90415
2,2 M	5%	4822 111 90185
2,4 M	5%	4822 111 90416
2,7 M	5%	4822 111 90417
3 M	5%	4822 111 90418
3,3 M	5%	4822 111 90191
3,6 M	5%	4822 111 90419
3,9 M	5%	4822 111 90421
4,3 M	5%	4822 111 90422
4,7 M	5%	4822 111 90423
5,1 M	5%	4822 111 90424
5,6 M	5%	4822 111 90425
6,2 M	5%	4822 111 90426
6,8 M	5%	4822 111 90235
7,5 M	5%	4822 111 90427
8,2 M	5%	4822 111 90237
9,1 M	5%	4822 111 90428
10 M	5%	5322 111 91141